FLIGHT

JUNE 1951
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MAGAZINE

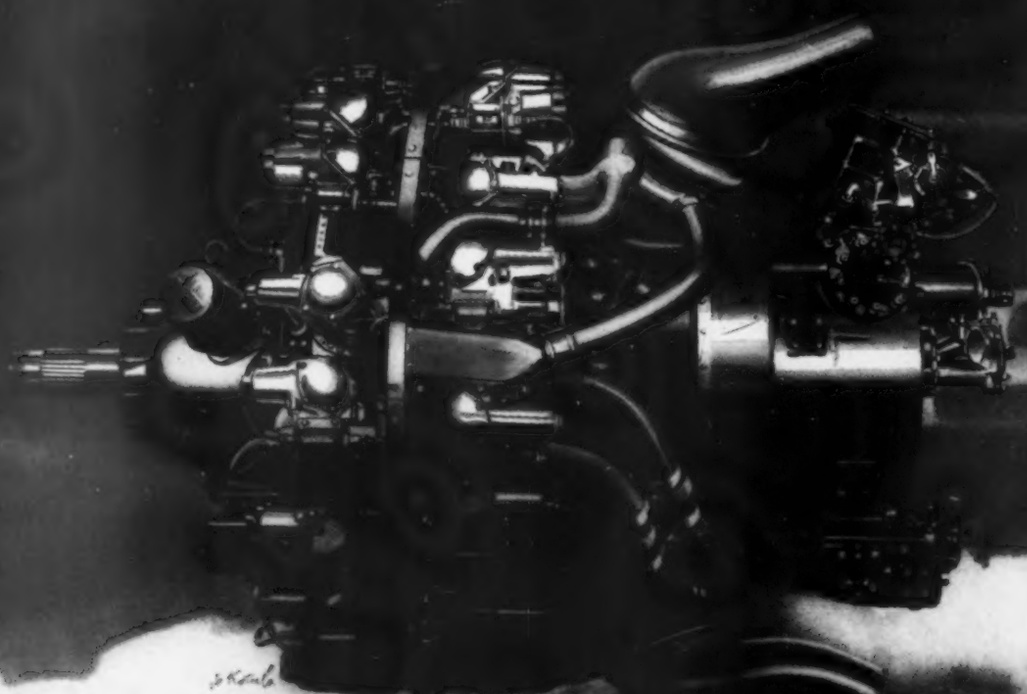
Including SOUTHERN FLIGHT and MODERN AIRPORTS

NORTHROP F-89 SCORPION

LONGVIEW TEXAS

3,500 HORSEPOWER PLUS... also

- .39 lb. per h.p. per hr.—fuel consumption at cruise power
- 1 horsepower PLUS per lb. of weight with exhaust system
- 18 cylinders that operate at only 43% of power at cruise
- 1 horsepower PLUS per cu. in. of displacement
- Short, stiff crankshaft; one piece master rod bearings
- Rugged steel crankcase for reliability and lower maintenance cost
- Balanced air distribution plus fuel injection for longer valve, piston and plug life
- Single lever throttle control—no power controls required

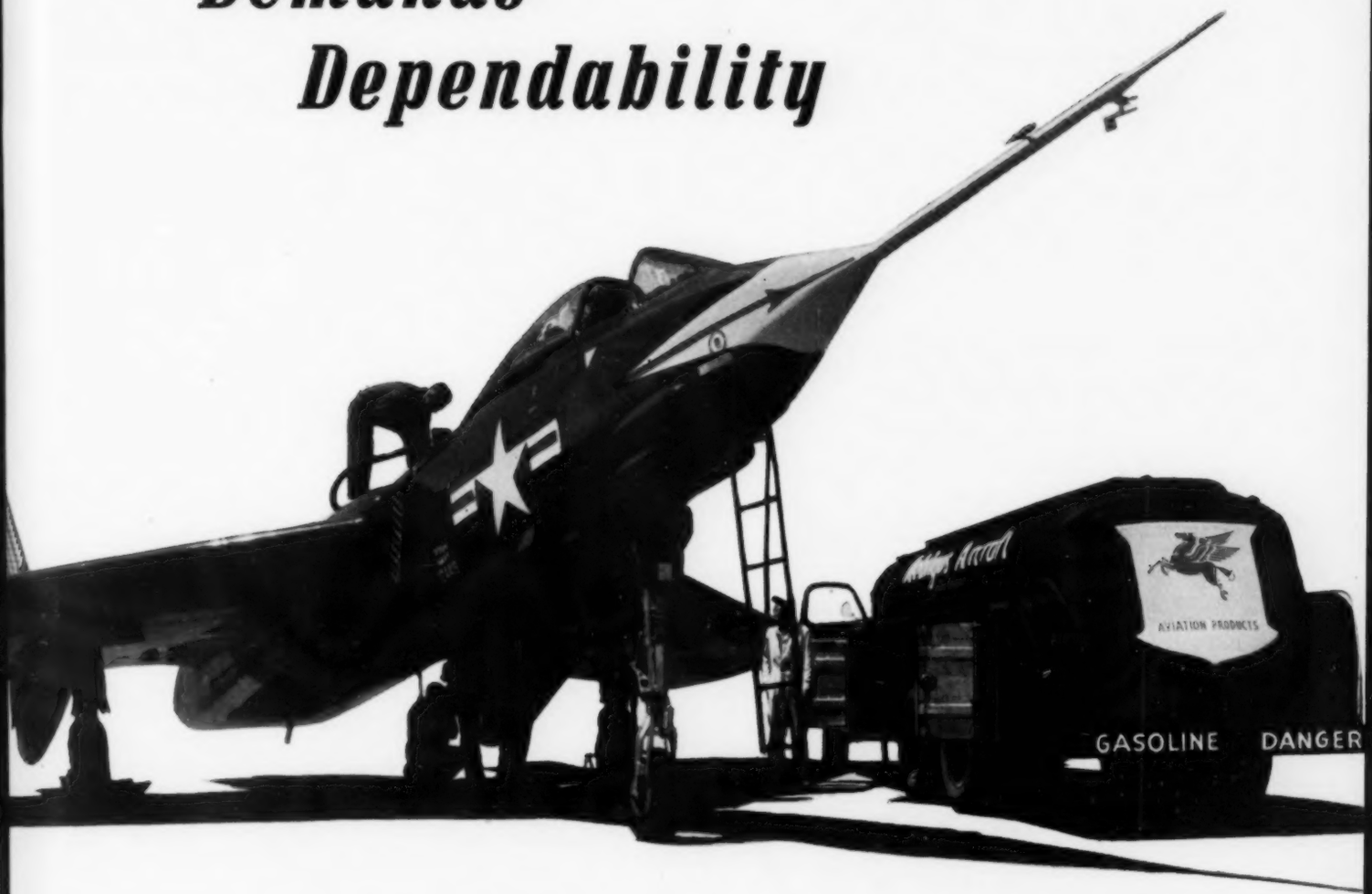


Turbo-Compound

WRIGHT *The World's Finest Aircraft Engines*

AERONAUTICAL CORPORATION
WOOD-RIDGE, N. J. • A DIVISION OF **CURTISS-WRIGHT**

Power Demands Dependability



Today's super-powered, super-performance jet aircraft demand maximum dependability, maximum performance from fuels used in their powerful engines. Chance Vought Aircraft's F7U (The Cutlass), newest Navy fighter in quantity production, fuels with specification Mobilgas Aircraft.

Mobilgas AIRCRAFT

FORWARD WITH *Aviation*

Mobiloil AERO

MAGNOLIA PETROLEUM COMPANY

TEMCO Modifies C-54 for Air Evacuation

Modification by TEMCO of the familiar C-54 transport into flying hospitals for the Military Air Transport Service is proceeding at top speed. Designated as the C-54 M it was developed for the rapid evacuation of sick and wounded personnel from overseas bases.

These planes were previously used on the Berlin Air Lift to fly coal and more recently to fly supplies to our troops in Korea. Designed to provide stateside hospital accommodations to our fighting forces in any part of the world, they can be quickly converted into troop or freight carriers.

Features Greater Comfort and Better Medical Care

Nothing has been overlooked to make these planes comparable to the finest hospitals. They are outfitted with 32 litters in four banks of four each on each side of the fuselage. Aft of the litters is a galley, a nurses' medicine cabinet and complete toilet facilities. The ship is completely insulated and soundproofed with the outside top half of the fuselage painted with a special solar heat resisting white lacquer. Automatic disinsection and a revised oxygen system are significant among the many innovations that make for comfort in this new flying hospital.

Production Line Overhaul Is Unique with TEMCO

TEMCO has developed overhaul, modification and conversion on a production line basis to a point where it is the country's outstanding resource for this type of work.

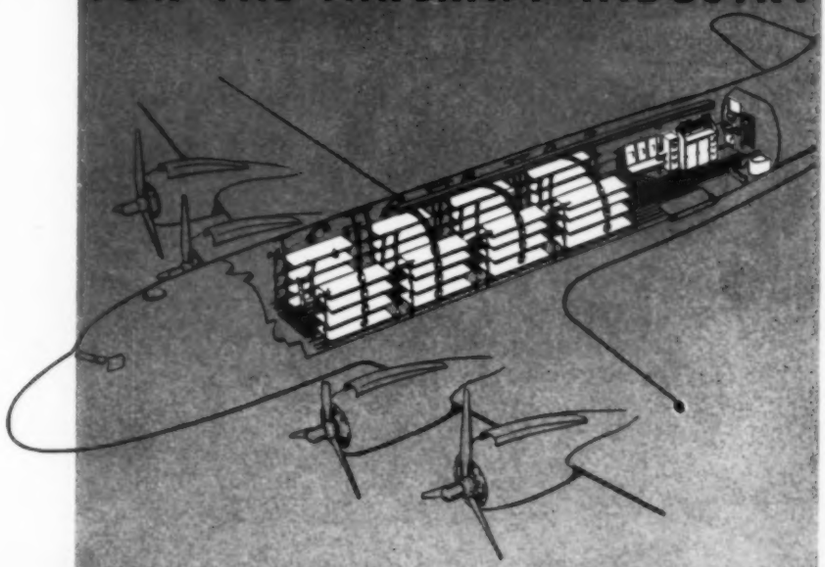
Nearly five hundred Air Force Skymasters have been reconditioned or modified in the past two years. TEMCO craftsmen have fabricated over 1800 parts unobtainable from regular sources. Many planes destined for the scrapheap have been rebuilt by TEMCO and put back in service.

TEMCO to Manufacture Assemblies for Lockheed P2V Neptune

TEMCO has started work on an undisclosed quantity of major assemblies for an advanced version of the Lockheed Navy P2V Neptune patrol bomber. This is the plane made famous by the Navy's Truculent Turtle.

TEMCO

ENGINEERS AND MANUFACTURERS FOR THE AIRCRAFT INDUSTRY



CONVERTS COAL CARRIERS TO

Flying Hospitals

Hospital accommodations comparable with the finest medical institutions are now available for the care of sick and wounded military personnel anywhere in the world. Carefully designed for every comfort and care including such innovations as automatic disinsection, the planes are capable of carrying 32 patients plus a medical crew of three. Formerly coal carriers on the Berlin Air Lift these planes are just a part of over 500 C-54's converted, modified or overhauled by TEMCO in the past two years.

TEMCO
TEXAS ENGINEERING AND MANUFACTURING CO., INC.
DALLAS, TEXAS

Texas Engineering and Manufacturing Co., Inc.

DALLAS, TEXAS

Here are figures to prove a

PIPER PACER

is a business necessity

In these critical days when so much must be done so quickly, savings in traveltime are important. When time saved means money saved as well, that's all the more reason why the 4-passenger Piper Pacer . . . a time- and money-saver if there ever was one . . . has become an essential piece of equipment for many business firms.

TABLE I. COMPARATIVE COSTS FOR 50,000 MILES

	AUTOMOBILE @ 6¢ per mi.	RAIL @ 5¢ per mi.	PIPER PACER @ 6.5¢ per mi.
Mileage Cost	$ 3,000 (for 1 or 5)	$2,500 (for 1)	$3,250 (for 1 or 4)
Personnel Value*	6,250 (for 1)	5,000 (for 1)	2,000 (for 1)
Personal Expense**	1,560 (for 1)	1,250 (for 1)	500 (for 1)
Total Travel Costs	$10,810	$8,750	$5,750

*Personnel value is figured conservatively at $5.00 per hour times traveltime. Average speeds are figured at 50 mph for train; 40 mph for auto and 125 mph for Piper Pacer.
**Personal expenses are figured at $10 per day.

Quite often the cost of transportation itself is the least important. Executive time and out-of-town expenses must be figured also. That's why the swift, comfortable Piper Pacer comes out ahead every time.

TABLE II. ANNUAL COST COMPARISON

MILEAGE	AUTOMOBILE	RAIL	PIPER PACER
20,000	$ 4,320	$ 3,500	$3,320
30,000	6,490	5,250	4,920
40,000	8,650	7,000	5,040
50,000	10,810	8,750	5,750
60,000	12,980	10,500	6,480
70,000	15,140	12,250	7,350
80,000	17,300	14,000	8,120
90,000	19,470	15,750	9,000
100,000	21,620	17,500	9,800

Auto is figured at 6¢ per mile, rail at 5¢. Pacer rate includes all fixed costs as well as maintenance and fuel. At 50,000 miles annually, the cost per passenger-mile by Pacer is only 1.6¢ total!

4-PASSENGER PACER AND TRI-PACER. You have your choice of the PA-20 Pacer, with regular gear, which cruises 125 to 134 mph, depending on propeller; and the PA-22 Tri-Pacer with tricycle landing gear, steerable nose wheel and inter-connected controls for maximum flying ease. Standard equipment includes new Piper Duraclad plastic non-flammable finish. Write for colorful Pacer brochure, Dept. F-6.

TABLE III. COMPARATIVE HOURS OF TRAVELTIME

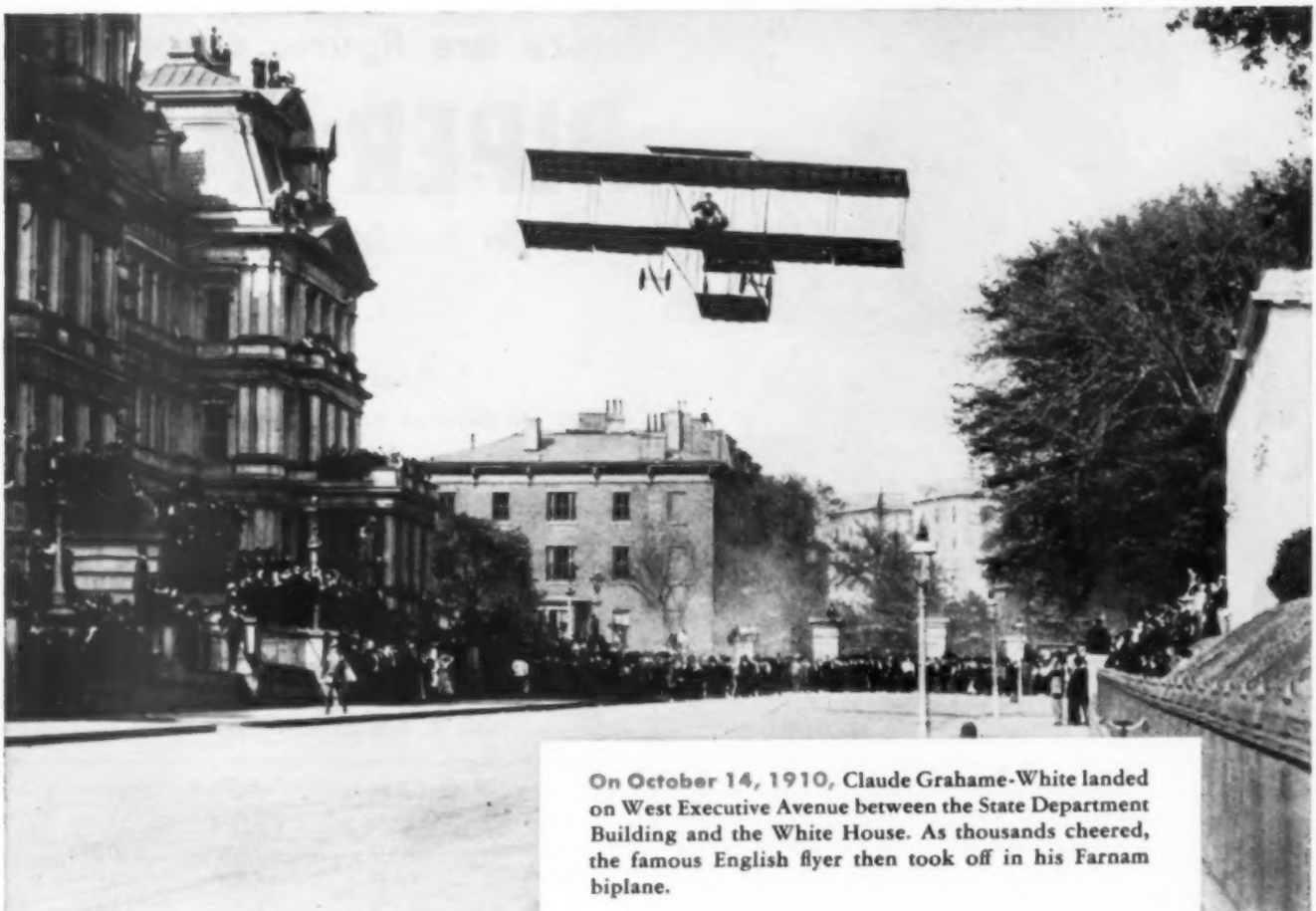
ANNUAL MILEAGE	AUTOMOBILE @ 40 mph (avg.)	RAIL @ 50 mph	PACER @ 125 mph
20,000	500	400	160
30,000	750	600	240
40,000	1,000	800	320
50,000	1,250	1,000	400
60,000	1,500	1,200	480
70,000	1,750	1,400	560
80,000	2,000	1,600	640
90,000	2,250	1,800	720
100,000	2,500	2,000	800

Look at it either way. You spend lots less time travelling by Pacer, or you can make more necessary trips in the same amount of time. By Pacer it's nothing to fly as much as 500 miles to make a call and return the same day.

PIPER

AIRCRAFT CORPORATION ——— LOCK HAVEN, PENNSYLVANIA

Washington gets an Eyeful...



On October 14, 1910, Claude Grahame-White landed on West Executive Avenue between the State Department Building and the White House. As thousands cheered, the famous English flyer then took off in his Farnam biplane.

In the past 40 years aeronautical engineers and petroleum chemists have worked together to bring aviation from the box-kite stage to the supersonic era. Wind tunnels, yes, and laboratory test tubes, too, have played their part in creating today's bigger, faster, better planes.

Phillips Petroleum Company has been a leader in the development of new and improved aviation fuels. Phillips is one of the nation's largest producers of aviation gasoline for military and commercial planes. Already Phillips is delivering much new fuel for turbo-props and jets.

Whenever you need dependable aviation products . . . high-octane gasoline, jet fuels, oils and lubricants . . . call on Phillips. The Aviation Department, Phillips Petroleum Company, Bartlesville, Okla.

NEWEST EYEFUL! Grumman F9F-5 Panther jet fighter carries six 5-in. NVAR rockets. Equipped with a J-48 Turbo-Wasp developing 6,250 lbs. basic dry thrust, this new Panther features extra speed, climb and altitude.

Phillips 66

AVIATION PRODUCTS

AIR Report

Significant Trends and News

BEECH HAS RAISED BONANZA PRICE $3,000, making the single-engine V-tail's new tag read $15,990. Rising costs of supplies, materials, labor and manufacturing were cited as the reason. Beech has absorbed a loss on Bonanzas during recent months. Distributors were posted on the rise in advance. Some 80 Bonanzas are on order at the old $12,990 price, after delivery of which the new price will become effective. . . . **ALL TWIN-BONANZA PRODUCTION THROUGH 1952 HAS BEEN SOLD** and Beech is no longer accepting deposits guaranteeing its $44,950 price. A system of priority deposits guaranteeing delivery position beyond the first 100 planes but not guaranteeing the price is being established.

Task Group "C", Air Transport Mobilization Survey, has completed a flying tour to the principal USAF Air Defense Command bases where **WARTIME AIR TRAFFIC PROBLEMS WERE DISCUSSED WITH TOP ADC OFFICERS.** Productive results of tour will be evident in near future when ADC-approved plan for movement of air traffic will be released to all civil airmen. Plan will include industry-prepared flight priority system originated by Emergency Aviation Council, a practical fan-out recall system utilizing all communications facilities and ground signals at all airports in case of enemy attack, and simple explanation of effect of wartime air defense missions on civil air traffic.

Aviation bombshell of the month was release of National Production Authority's product assignment directory and official CMP Class B product list. **CMP CLASSIFIES NON-AIRLINE AIRCRAFT ALONG WITH BATH SALTS, HORSE-DRAWN SLEIGHS AND BEER-DISPENSING EQUIPMENT DESPITE ASSURANCES FROM TOP-LEVEL CIVIL AVIATION AUTHORITIES THAT ESSENTIAL CIVIL AVIATION WOULD BE ADEQUATELY PROVIDED FOR IN THE CONTROLLED MATERIALS PLAN.** In a long distance telephone conversation with D. W. Rentzel, newly appointed undersecretary of Commerce, FLIGHT MAGAZINE editors were told that an aviation division would be soon established within NPA and the low rating allocated to civil aviation would be definitely changed.

REPORTING NEW AND LARGE MILITARY ORDERS FOR ITS AIRPLANES, Cessna has advised distributors the situation remains good for Model 170 deliveries on a first-come-first-served basis and fair on Model 190's. "If commercial orders support additional production we will do our best to keep supplying the demand," Cessna assured its outlets.

A PIPER PACER HAS SET A NEW TRANSCONTINENTAL SPEED RECORD, being flown nonstop by Max Conrad of Minneapolis from Los Angeles Municipal Airport to Laguardia Field in New York, a distance of 2,461 mi., in 23 hrs., 4 mins., 21 secs. Previous record was 30 hrs., 47 mins. for a flight over virtually the same distance by John M. Jones in 1938.

NEW APPOINTMENTS TO KEY CAA POSTS by Administrator Charles F. Horne include those of Frederick B. Lee as deputy administrator for operations; John M. Beardslee as director of federal airways, and Joseph H. Tibbets, deputy director, airways.

IMPLEMENTATION OF NSRB TASK GROUP PLANNING for civil aviation mobilization is getting under way. Undersecretary of Commerce Del Rentzel has installed Maj. Gen. Donald H. Connally as director of mobilization for civil aviation. He will direct a staff including a deputy and three directors (for air transport, general operations, and airports and airways.)

CHASE AIRCRAFT COMPANY is anticipating large military order for its assualt transport and has a new president and chief executive in the person of Edgar Kaiser, president of Kaiser-Frazer Corp., which has acquired 49 per cent of Chase stock. Mike Stroukoff, former president, is now vice president and chief engineer.

★ ★ ★

FLIGHT MAGAZINE
Including SOUTHERN FLIGHT and MODERN AIRPORTS

JUNE, 1951 VOL. 35, No. 6

COVER: A view of the Northrop F-89 Scorpion on extended flight test from Edwards Air Force Base, Muroc, California. The twin-jet all-weather fighter is in the 600-mph. category, has six 20-mm. cannon and radar gear for probing air and ground targets.

—(Northrop Photo.)

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GEORGE E. HADDAWAY, Editor-Publisher; TOM ASHLEY, Managing Editor; FRED N. STONES, JR., Business Manager; *West Coast Representatives*, TED SCHELL and STAN BROWN, 1200 Rives-Strong Bldg., Tel. Vandike 8921, Los Angeles.

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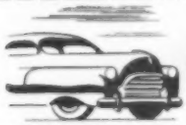
here are 10 reasons

why more private flyers stop on the SOUTHWEST AIRMOTIVE ramp

than anywhere else in the land!

1 Skilled, hospitable line men (who daily don fresh uniforms).

2 Quick, expert refueling from a fleet of seven gas trucks.



3 Rent cars at the ramp.

4 Coffee shop.

5 Clean, convenient rest rooms.

6 Comfortable lobby and "Skyvue Porch."

7 Courteous attendants to handle gas tickets, provide information, and help with hotel reservations.

8 Free telephones, including direct line to "Dallas Radio."

9 Immediate access to the Western Hemisphere's most famous One Stop service organization.

10 Never-ending "pilots' reunion" as old friends cross trails on the Biggest Welcome Mat in Private Aviation—30 acres of concrete!

Treat yourself to SAC's Super Service on your next cross-country.

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Just among ourselves

EDITORIALS

COMMUNICATIONS CRISIS

WE are forced to take the dim view of certain recent developments in the so-called modernization of the Federal airways system, especially in regard to changes in our aircraft radio communications, which more and more are becoming the real key to aviation safety. What bothers us is the definite trend toward a communications network designed primarily for large and fast transport and military aircraft. It appears that in a few years if you don't have a big airplane capable of carrying thousands of dollars worth and hundreds of pounds of fancy radio equipment, you'll have to be satisfied with a few crumbs that drop from the communications table. Fact of the matter is, CAA starts dismantling 53 of the old standby low frequency four-course radio ranges next month—the first casualties in a new program for phasing out all L-F ranges eventually, because, as CAA Administrator Horne points out, "We cannot continue indefinitely the maintenance of two systems of navigation."

Maybe we are too old fashioned. But until all the bugs are out of the VOR (omni range) line-of-sight system and until VHF and omni equipment for the average transient pilot is both available and much cheaper, aircraft utility is going to suffer during the change-over. To make matters even worse, they even plan to drop one of the VHF frequencies—111.1—around July 1, without assigning a substitute communications frequency. Although we agree that some range stations might well be combined with tower operations, we can not accept such combinations at points of heavy air traffic operations.

Nearly all airmen who fly nowadays recognize the FCC's problem of frequency saturation of the spectrum—of the scores of demands from all corners of the compass — television, police, military, etc., clamoring for more frequencies. But from where we stand it appears that non-airline, non-military aviation is getting the well-known run around and the CAA is a party to it. Many executive airplanes, in order to maintain minimum safety standards, are having to install equipment capable of using airline and military frequencies. Like the weather service, when the weather is bad your communications become the most important item aboard, yet saturation of traffic, VOR ground equipment being "shut down for maintenance" and further reduction in the number of frequencies available are creating new hazards at a time when we are just beginning to compile safety figures that can be translated into public acceptance of our vehicle. It all hinges on practical and 100 per cent reliable air traffic control. But you can't control airplanes and pilots if you can't communicate with them. It's that simple.

If we did not know there are sincere and fair-minded people working on the problem we would suspect a well-planned conspiracy to run everything out of the air except the large scheduled and military equipment. The airlines and the military do a good job of sitting on the Washington committees and bird-dogging their own requirements. But the agencies and associations representing the little guy just don't cut the mustard in the same measure or as thoroughly.

Where the solution lies, we admit we don't know. The big point for everybody to keep in mind, however, is that nothing in facilities should be taken away from non-scheduled aviation users without providing them a practical alternative or substitute. At this advanced stage of aircraft utilization, anything that is taken away in the form of communications and navigation facilities reduces aircraft utility. This utility can be whittled away until individuals, business executives and essential industries no longer find private air transportation effective in their daily affairs. When that point is approached, scheduled carriers and the military will have the airways to themselves, make no mistake about it.

Perhaps we can urge meetings between representative user groups and the various CAA regional administrators and their staffs. They are now asking for comments in June on the L-F range reduction program and that might well be the place to start yelling for recognition of the problem that is bound to become more serious as the days pass by. Action in the CAA regions might well fan out to a national movement that will force realism at the Washington level and a re-appraisal of the program in the light of non-scheduled aviation's present plight. But it's up to the user to represent himself. Apathy and waiting for someone else to carry the ball will result only in continually being ignored when the pie is cut.

THE SOUTHWEST AIRWAYS CASE

SOUTHWEST Airways, a local service airline operating up and down the West Coast, recently petitioned the Civil Aeronautics Board for a lower mail rate, and was promptly advised that it would receive $115,000 less per year than the airline would receive under the present final mail rate.

Some time ago it was revealed that one of our largest trunk airlines actually paid the U. S. government more money in taxes than it received in mail pay during 1950. Unfortunately these factual developments in recent air transportation history are not widely publicized. A broad segment of the public and certain publishers within the newspaper fraternity still parrot the railroad propaganda that air transportation is heavily "subsidized" by Uncle Sam. Too few of our citizenry realize that with the single exception of several entirely justifiable and worthy cases of subsidy for new services into towns heretofore without air

(Continued on page 32)

Certified Beechcraft Service

Aircraftsmen, Inc.
Will Rogers Field
Oklahoma City, Oklahoma

Alamo Aviation, Inc.
Municipal Airport
San Antonio, Texas

Anderson Air Activities
General Mitchell Field
Milwaukee, Wisc.

Truax Field
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Atlantic Aviation Service
New Castle County Airport
Wilmington, Delaware

Atlantic Aviation Corp.
Teterboro Airport
(25 minutes from Times Square)
Teterboro, New Jersey

Butler Co., Aviation Division
Municipal Airport
Chicago, Ill.

Currey Sanders Aircraft Co., Inc.
Downtown Municipal Airport
Shreveport, La.

Francis Aviation
Capitol City Airport
Lansing, Michigan

Gray Aircraft Svc. Co., Inc.
D. A. Cody, Service Mgr.
Love Field, Dallas, Texas

Harte Flying Service
Municipal Airport
Wichita, Kansas

Hunter Flying Service, Inc.
Hunter Field
Cedar Rapids, Iowa

Ohio Aviation Company
Dayton Municipal Airport
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J. D. Reed Co., Inc.
Municipal Airport
Houston, Texas

Roscoe Turner Aeronautical Corp.
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Tradewind Airport Corp.
Tradewind Airport
Amarillo, Texas

Tulsair Distributors, Inc.
Hangar 5, Municipal Airport
Tulsa, Oklahoma

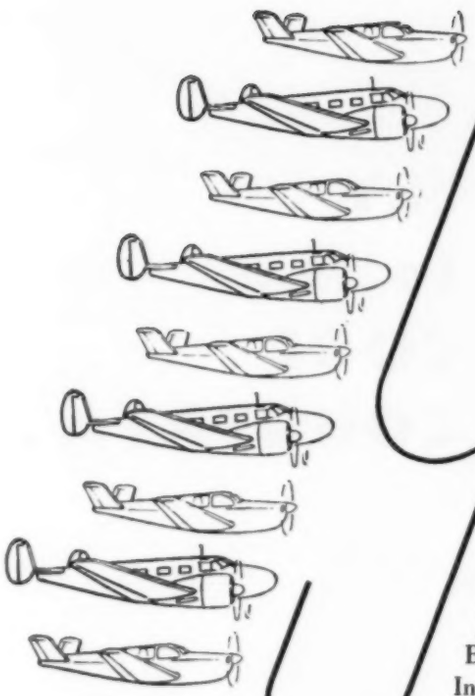
Wings, Incorporated
Wings Field
Ambler, Pennsylvania

Philadelphia International Airport
Philadelphia, Pennsylvania

Why the FIRST names in industry depend on the FIRST names in aviation service

Leadership naturally attracts leadership! Significant of this is the fact that such a large percentage of the country's leading industries depend on the facilities of the CERTIFIED BEECHCRAFT SERVICE STATIONS listed hereon. These firms are leaders in the aviation industry with many years of experience and service. Their leadership has been recognized through unmatched high standards.

The CERTIFIED BEECHCRAFT SERVICE STATIONS have assembled for you the finest facilities possible, trained the most capable staff in factory methods and sell only authorized parts and accessories. This means no time lost through lack of proper tools, parts or know-how— *all aimed at saving you valuable time and money.* **One visit will convince you there is a difference in the service you receive.**



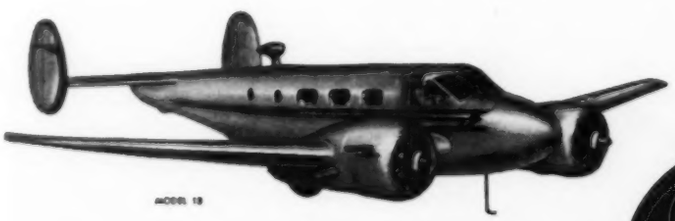
9 WAYS

Ohio Oil Company personnel save days, dollars...and energy

The Ohio Oil Company keeps nine Beechcrafts on the go—five Bonanzas, four Executive Transports.

States the manager of Ohio's aviation department: "It takes just four hours from Findlay, Ohio, where most of our Beechcrafts are based, to our division office at Tulsa, Oklahoma. In our fast-moving business, Beechcrafts let us set an efficient, profitable pace."

Beech "Twins" have proved themselves all over the world—in service of leading industries and the armed forces alike. Soundproofed cabin and custom-interior plans insure fatigue-free travel. Exceptional speed (maximum 230 mph) and any-season dependability give key men unsurpassed ability to move—*fast*. For full information see your Beechcraft distributor. Or write to Beech Aircraft Corporation, Wichita, Kansas, U.S.A.



- Cruising speed, 200 mph
- Range up to 900 miles
- Service ceiling, 20,500 ft.
- Seating arrangements for 7, 8 or 9

Beechcraft

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

FLY to the COOL COUNTRY...

FT. STOCKTON

Get away from the heat this summer on flying week-end trips to Ft. Stockton. Swim in the cool, clear waters of famed Comanche Spring; fish in the nearby Pecos River and Leon Springs Reservoir; relax and enjoy the cool climate and wonderful scenery of this West Texas oasis. There are fine overnight accommodations for your convenience.

On your trip stop over at Gibbs Field, located just two miles from Ft. Stockton. The field has excellent ground facilities, including a 4200-foot hard-surfaced runway.

Pecos County Airways' Bob Luce and an experienced crew offer excellent service with a complete line of Humble-Esso Aviation products — *first with flyers in Texas.*

HUMBLE OIL & REFINING COMPANY

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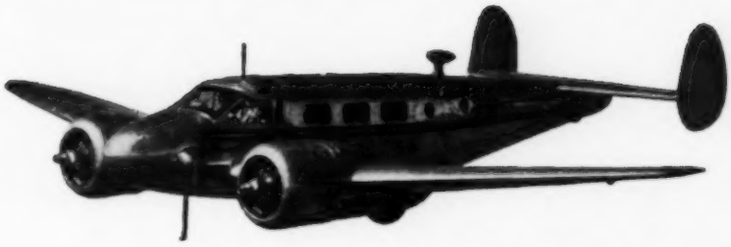
There's no better light plane gasoline than Humble-Esso 80/87. Clear, unleaded, it burns clean, delivers steady power, gives extra hours between costly top cylinder overhauls. Humble-Esso 80/87 is available at Gibbs Field and over 70 other fine airports throughout Texas.

AVIATION PRODUCTS

Beechcraft *in the air*



and REED *on the ground*

Beechcraft is a great name in the air. The Beech Executive Transport and Bonanza models are the World's finest airplanes designed specifically to meet the requirements of leading executives who appreciate the importance of air travel in modern industry.

On the ground the name Reed means more efficient, economical and pleasant hours in the air for you. The J. D. Reed Company has built a superior sales and service organization to serve those who accept only the best. Twenty years of such service has placed Reed far ahead in facilities and technical know-how.

If you are in the market for a new aircraft or in need of service on your present one, you will find the J. D. Reed Company a good place to do business.

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MUNICIPAL AIRPORT
HOUSTON, TEXAS

Safety Send-off

New single-engine dependability for twins established by the Aero Commander

By TOM ASHLEY

FOR the first time on record in aviation history, a twin-engine airplane using only one engine has taken off at gross weight and completed a cross-country flight of over 1,000 miles. The feat was accomplished on May 9 by the prototype of the new Aero Commander Model 520, now in production — a 5-6-place private-owner type high-wing grossing 4,800 lbs. Normally powered by two Lycoming engines rated at 260 hp. each for take-off, the prototype made the flight with the propeller removed from its left engine. Its right engine and propeller alone being operative, it took off from Oklahoma City and flew 1,160 miles non-stop to Washington, D. C., in 7 hrs. 55 mins., utilizing 15-mph. wind assistance to average 147 mph. in ground speed and 13.6 gals. per hr. in fuel consumption.

Establishing unprecedented standards of single-engine performance for twin-engine aircraft, the flight was conducted as a demonstration of the safety available in event of single-engine emergency operations. It indicates that the Aero Commander all but eliminates much of the hazard of an engine failure on take-off, proving itself capable of positive directional control at the critical point between twin-engine take-off and single-engine flying speed.

Safety speed for completing a take-off on one engine is specified at 75 mph. for the Aero Commander by its manufacturer, Aero Design and Engineering Company of Oklahoma City. What the demonstration flight proved is that the airplane is actually capable in an emergency of accelerating to this safety speed on but one engine and then climbing out and cruising at long periods, all the while remaining under complete directional control and within normal engine limitations.

To see it work, we watched the take-off and accompanied the Aero Commander in another airplane to its destination. What we had anticipated as a dramatic stunt turned out to be a straight-forward, uneventful operation, bordering on the routine.

Dawn for take-off brought low scud as we taxied off the ramp to begin the big flight. We were a procession of three airplanes. First was the Aero Commander, piloted by Company Test Pilot Bert Bantle with an observer, Emmett R. (Bob) Morris, who flies a Cessna 195 in construction work. Second was George Pew's Bonanza, with us as an observer. Behind was Rufe Amis in his Cessna 195. Pew and Amis are co-owners of Aero Design & Engineering Co., which is producing the Aero Commander at Tulakes Airport in Oklahoma City. With Amis

LOG OF AERO COMMANDER'S SINGLE-ENGINE TAKE-OFF & NON-STOP FLIGHT FROM OKLAHOMA CITY TO WASHINGTON, D. C., MAY 9, 1951.
PILOT BERT BANTLE; CO-PILOT E. R. (BOB) MORRIS; GROSS TAKE-OFF WEIGHT, 4,853 LBS.; TOTAL FUEL CARRIED, 160 GALS.

Station	Time Over	Course	Total Miles	Total Time En Route	Ground Speed	Indicated Air Speed	Alt.	Temp.	Man. Pr. and Rpm.
Oklahoma City	0515	(Take-Off)							
Sparks	0537	60	48	:22	131	125	3,000	60	23-2,750
Yonkers	0614	60	140	:59	144	125	3,000	60	23-2,750
Branson	0702	60	260	1:47	145	125	3,000	60	23-2,750
Eminence	0745	60	367	2:30	155	125	3,000	60	23-2,750
Fuel Consumed, 34 gals.; Fuel Remaining, 126 gals.									
Advance	0816	60	445	3:01	148	125	3,000	59	23-2,750
Muddy	0851	60	530	3:36	141	125	3,000	59	23-2,750
Chrisney	0924	77	612	4:09	153	125	3,000	59	23-2,750
Fuel Consumed, 56.5 gals.; Fuel Remaining, 103.5 gals.; Noted Change in Attitude and Speed Due to Lessening Load from Fuel Consumption; Power Reduced to Maintain IAS 125 mph.; New Setting 23 ins. and 2,700 rpm.									
Louisville	0955	77	690	4:40	150	125	3,000	60	23-2,700
Millersburg	1029	85	770	5:14	141	125	3,000	58	23-2,700
Huntington	1106	85	858	5:51	143	125	3,000	58	23-2,700
Fuel Consumed, 93.9 gals.; Fuel Remaining, 66 gals.; Went to 5000 ft. Cruising Altitude.									
Gassaway	1145	77	954	6:30	153	125	5,000	52	23-2,700
Elkins	1206	77	1006	6:51	149	125	5,000	55	23-2,700
Front Royal	1242	94	1094	7:27	155	125	5,000	55	23-2,750
Washington	1410	106	1160	7:55	147				

Fuel Consumed, 117 gals.; Fuel Remaining, 43 gals.; Av. Fuel Consumption, 13.6 gals. per hr.; Av. Horsepower used, 158; Oil Consumed, 3 qts.*; Oil Remaining, 9 qts.; Av. Ground Speed, 147 mph.; Av. True Air Speed, 132 mph.; Av. Wind Effect, 15 mph.

*Oil consumption before and after flight indicates only 1 qt. oil consumption if 10 qts. had been carried instead of full 12-quart capacity. 2 quarts were believed burned off or blown away after take-off.

Over the Ozarks and headed non-stop from Oklahoma City to Washington, D. C., the Aero Commander is shown above with its left propeller removed. Note right rudder trim. Right engine was operated at 70 per cent of power, giving 132-mph. single-engine true air speed at 3,000-ft. altitude used on this trip for cruising. Ground speed for 1,160-mi. single-engine flight averaged 147 mph. This excellent photo was made by Rufe Amis, president of firm manufacturing the Commander. Bottom photo, made by FLIGHT MAGAZINE, silhouettes the Aero Commander as it climbed to 5,000 ft. near Elkins on the last leg of the flight.

were Aero Design's general manager and chief engineer, Ted Smith; Sales Manager Carl Wootten, and the flight's other observer, Wayne Thomis, Chicago Tribune aviation editor.

"Ready to go," toned Bert after a brief run-up of the Aero Commander's right Lycoming 260. The propeller had been completely removed from its left engine and was stowed away.

"Clear for take-off," came the go-ahead from Will Rogers Tower. We strained to watch Bantle accelerate the Commander's one operative engine, knowing it would be a slow start. Too much sudden power would swing the right wing. He was holding full right rudder and had trimmed the Aero Commander about 3 degrees nose down. He was also using a hydraulic steering device which had been installed on the nose wheel in studies to deter-

(Continued on page 36)

It Happened on 3105

Pilot Charlie and his passenger were doomed, but a voice on the radio flew them in

DESPITE what we say here, it will probably happen again. Some people never seem to learn. But by warning them again, maybe this story of a living nightmare can prove effective in preventing some future air accident, making the airways safer and spotlighting the importance of competent communicators whose work for CAA and private-owner aircraft is all too often taken for granted—both by CAA and pilots.

It happened on April 13, 1950, in Ohio, vicinity of Columbus. Not wanting to identify him for obvious reasons, we'll call him Pilot Charlie and his aircraft Zero Zero King, both designations being fictitious although the episode really happened and is on the records of Columbus Radio in hair-raising detail.

Pilot Charlie had departed Lancaster, Ohio, for Zanesville in a 5-pl. airplane, carrying one passenger. At 4:15 p. m. he called Columbus Radio for Columbus, Mansfield and Cleveland weather. All three points were reporting instrument conditions. Then Pilot Charlie did a smart thing. He told Columbus Radio he was lost. He added he was flying in instrument conditions. Could Columbus Radio be of assistance?

For the next 2 hrs. 22 mins. Zero Zero King was a derelict. Columbus Radio not only could be of assistance but probably saved the lives of Pilot Charlie and his passenger. Before it was over, nine other aircraft had been held over Columbus to avoid collision with the derelict—six air carriers, two Navy transports and a National Guard plane, all of more than 300 total passenger capacity. Over-all cost of the delay to these aircraft can be conservatively estimated at $4,300 for the 2 hrs. 22 mins.

With Pilot Charlie's ears glued to 3105 kc., Aircraft Communicators Robert J. Cramer and Melvin F. Fisher practically flew Zero Zero King by remote control. Cramer, a pilot in his own right, handled the microphone. How it all worked out is best traced through the following chronological account of events taken from Columbus Radio's log:

4:20: Notified ARTC (Air Route Traffic Control Center) and Airport Control Tower of emergency and alerted Navy GCA (Ground Controlled Approach) at Columbus. Tower unable to hear Aircraft Zero Zero King, whose weak signals also difficult to read at Columbus Radio.

4:22: Gave Pilot Charlie altimeter setting but he advised *he did not know how to set his altimeter.* Asked to identify radio range signal he was receiving, he replied: "Dash-dot." Pilot said *he was not familiar with range procedures or instrument flying.*

4:24: Communicator Cramer figured aircraft must be somewhere south of east course of the range, since Zero Zero King had departed Lancaster, 28 mi. southeast of Columbus, on an ENE heading and was hearing an "N" signal. Cramer described signal changes and told pilot to take northerly heading until he heard steady (on-course) signal.

4:40: Suggested to pilot that he contact Approach Control at Columbus Tower in order to try GCA. But Tower said no contact made. Pilot then advised to stay on range frequency.

4:43: Pilot advised he believed he was on east course of range and headed west. Cramer suggested he take a westerly heading of 264 degrees, remain on the on-course and report any signal strength changes. Pilot soon reported increasing signal strength and difficulty in holding on-course due to narrowing leg. This established aircraft's position on the east course very close to the range station. Cramer advised pilot to make 180-degree turn, take heading of 84 degrees and start letting down while keeping on the on-course. Pilot replied he was descending headed east and could occasionally see the ground but not long enough to make out objects.

4:50: GCA advised they were unable to pick up aircraft and requested the pilot to climb so GCA scope could pick him up. While flying heading suggested by GCA, the decrease in signal strength indicated the aircraft was getting away from the station. To avoid loss of communication, Cramer instructed pilot to make a 180 and proceed back towards the station, staying on the on-course. Signals from aircraft were then very weak.

4:55: GCA advised Columbus Radio through Columbus Tower they had a small aircraft on the scope, located 4 mi. west-southwest of airport. Pilot was then requested to make left turn to assist GCA in identifying indication on the scope. GCA then confirmed their indication was the lost aircraft. *Pilot became confused on headings.* He first stated he was heading south, then corrected it to east and finally to west. All this time Pilot Charlie was flying on instruments. Cramer recorded his

signal strength as increasing at Columbus Radio. GCA then advised that the aircraft previously picked up was not the lost aircraft.

5:00: Pilot Charlie reported his compass spinning, losing altitude rapidly and air speed increasing. It was apparent he was highly nervous and had failed to recognize his aircraft's attitude from basic instrument indications. He also reported his passenger was very air sick. From his own piloting experience, *Cramer advised Pilot Charlie he was spinning in,* then instructed him to throttle back, neutralize the rudder, relax his stick pressure and then apply slow back pressure. Pilot Charlie did this and reported he had recovered. Asked his altimeter reading, he said 1,200 ft. (about 550 ft. above the ground), and that everything was okay again. *Several times later he reported going into more spins. Each time, Communicator Cramer at the microphone repeated his instructions for throttling back, neutralizing rudder and relaxing his stick pressure before slowing pulling back on the stick. Each time the aircraft recovered.* Several aircraft in the vicinity of Columbus were being held 500 ft. on-top over the outer compass locator and were now instructed to keep a lookout for the lost aircraft should he break out on top of the overcast. GCA reported a succession of targets on their scope but none could be identified and it was assumed the lost aircraft was flying too low to be picked up by radar.

5:15: Communicator Cramer, with permission from ARTC and the Tower, instructed Pilot Charlie to climb through the overcast and hold at 500 ft. on top so that other aircraft could spot him.

5:20: Pilot reported he was losing air speed and starting to hold altitude in climb position. *Cramer advised he was approaching a stall* and should lower his nose to pick up some speed, after which he should add some power and start a shallow climb. Pilot Charlie shortly reported he was above the cloud level and was okay, except he couldn't see any aircraft.

5:30: Decreasing strength of signals from aircraft indicated Zero Zero King was again heading away from Columbus Radio. Cramer instructed him to pick up the on-course signal on a heading of 264 degrees and to remain clear of the clouds. Pilot Charlie replied he had about one hour's gas remaining but his oil pressure was getting low.

5:49: TWA Flight 441, a DC-3, reported he had the lost aircraft in sight atop the overcast. He suggested the lost aircraft stay on his left wing and follow him in. But Charlie lost the DC-3 in the diminishing visibility. Cramer advised him to hold his heading anyway and he would soon break out of the clouds. Pilot Charlie then reported he could not see the ground. At this time Columbus weather was 600 ft., ceiling indefinite, overcast, visibility 2½ miles, with fog.

Aircraft Zero Zero King then reported he had run into bad weather again, was lost and seemed to be diving. Cramer suggested he throttle back and continue his descent, reminding him to maintain his heading of 264 degrees. GCA was still unable to pick up the aircraft. Pilot Charlie reported he was receiving an on-course signal and in Columbus Radio's room, signals from Zero Zero King were loud and clear.

(Continued on page 32)

B. J. Mauro, president of Taylorcraft, congratulates 11-yr. old Al Bennett, Jr., on his return from Mexico where he soloed his father's T-Craft.

SOLO AT 11

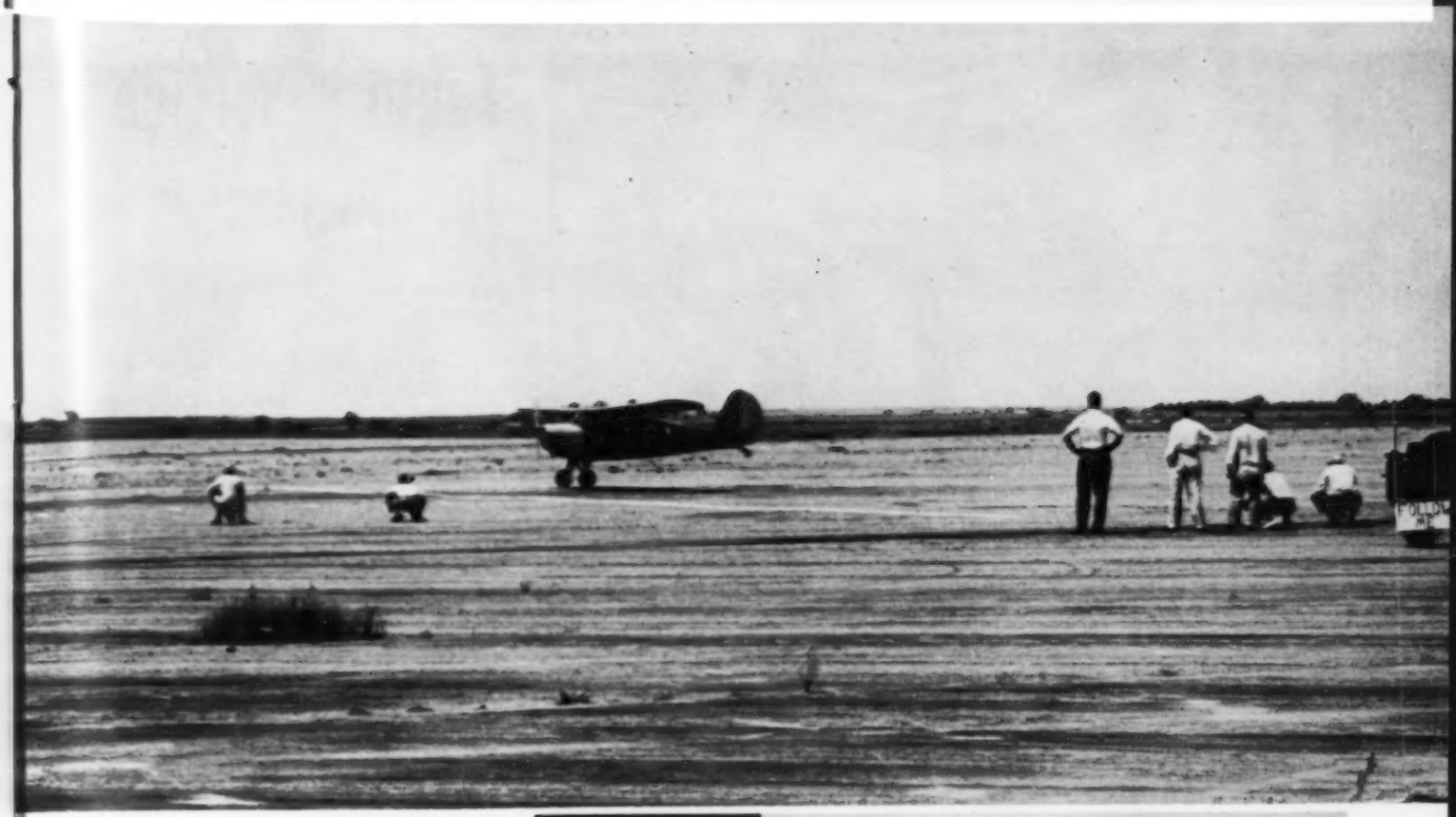
CHILDREN have been flying airplanes for a long time but Al Bennett, Jr., has reason to believe he is the youngest ever to solo. He hopped a T-Craft by himself recently at a fishing camp air strip in Mexico, La Pesca on the Soto la Marina River, being one week past 11 years in age at the time. The youngest previously to solo of FLIGHT MAGAZINE's knowledge had been the daughter of Marty and Les Bowman. Les soloed her when she was 12 (his daughter is now married and has a family).

Young Al is the son of the vice president and sales manager of Taylorcraft, Inc., of Conway, Pa., manufacturers of personal airplanes. Papa Al, 10 years an instructor, said Junior had been flying with him for six years, becoming a "natural" pilot. He was ready to solo several months before his birthday but 16 yrs. is the minimum age for solo pilots in the Civil Air Regulations. Friends suggested the fishing to Mexico.

By the time they arrived, Junior had logged 71 hours of instruction. Ed Zambrano, who operates the camp, shooed the burros off while Al stepped out of the T-Craft, and Junior taxied to the end of the strip, checked the magnetos and took off. "It was nothin'—I knew what to do," he told friends on returning home. Not until he is 16 can he obtain a pilot's license. Papa Al, proud as can be, had already taught Junior's mother, Mary Lee, to fly, and several thousand other students in his days as an instructor. Now Daughter Betty Lee, 9, is riding with him in earnest while her little sister, Katherine, is working up interest. Katherine is 3½. ★ ★ ★

Fighter Accuracy

A triple-purpose electronic sight for fighters, which computes for gunnery, rocketry and bombing, has contributed to the Korean successes of the 27th Fighter-Escort Wing. In 7,500 sorties, this Wing claimed over 10,000 enemy troop casualties and some 11,000 buildings destroyed. Top photo shows F-84 firing rockets in training. Scenes below picture sequence following release of napalm gasoline bomb, illustrating how its boiling flames cover a wide area within seconds. Mortals protected from napalm flames usually die from lack of oxygen within its fiery mass. New triple-threat sight was developed at MIT by Dr. Stark Draper under USAF sponsorship and is produced by Sperry. Photos are from Republic Aviation, producers of F-84 Thunderjet. ★ ★ ★



INTERCOLLEGIATE AIR MEET

EIGHT universities and colleges were represented by winners in last month's 1951 Intercollegiate Air Meet at Norman, Oklahoma, with the University of Oklahoma as host. Trophies for competitive flying events included those offered by Beech, Cessna, Braniff, Piper, Bendix, Aeronca, USAIG Underwriters and American. ★ ★ ★

In the photo of winners are Don Pohlman, Oklahoma A. & M.; Deborah Knight and Barbara Erickson, Stephens College; Charles Ming; Joe Barnes, University of Minnesota; Fred Wolter. Warren Hunter and Warren Erickson, Macalester College; Bill Hackett and Wilbur Light, University of Oklahoma; Vic Olson and Warren Eberspacher, Minnesota; William Cavin, Okla. A. & M.; Jerry Quitney, Montana State; and Omar Skaggs, Okla. A. & M. Group at left officiated. They include Tom Bartlett, Chicago radio emcee; W. T. Piper, the manufacturer; Joe Coulter, OU aviation chairman; and CAA Representatives Fred Reed, Hugh Raulerson, Al Reed and Bob Royal.
—(University of Oklahoma Photos.)

Factory Service for Owners

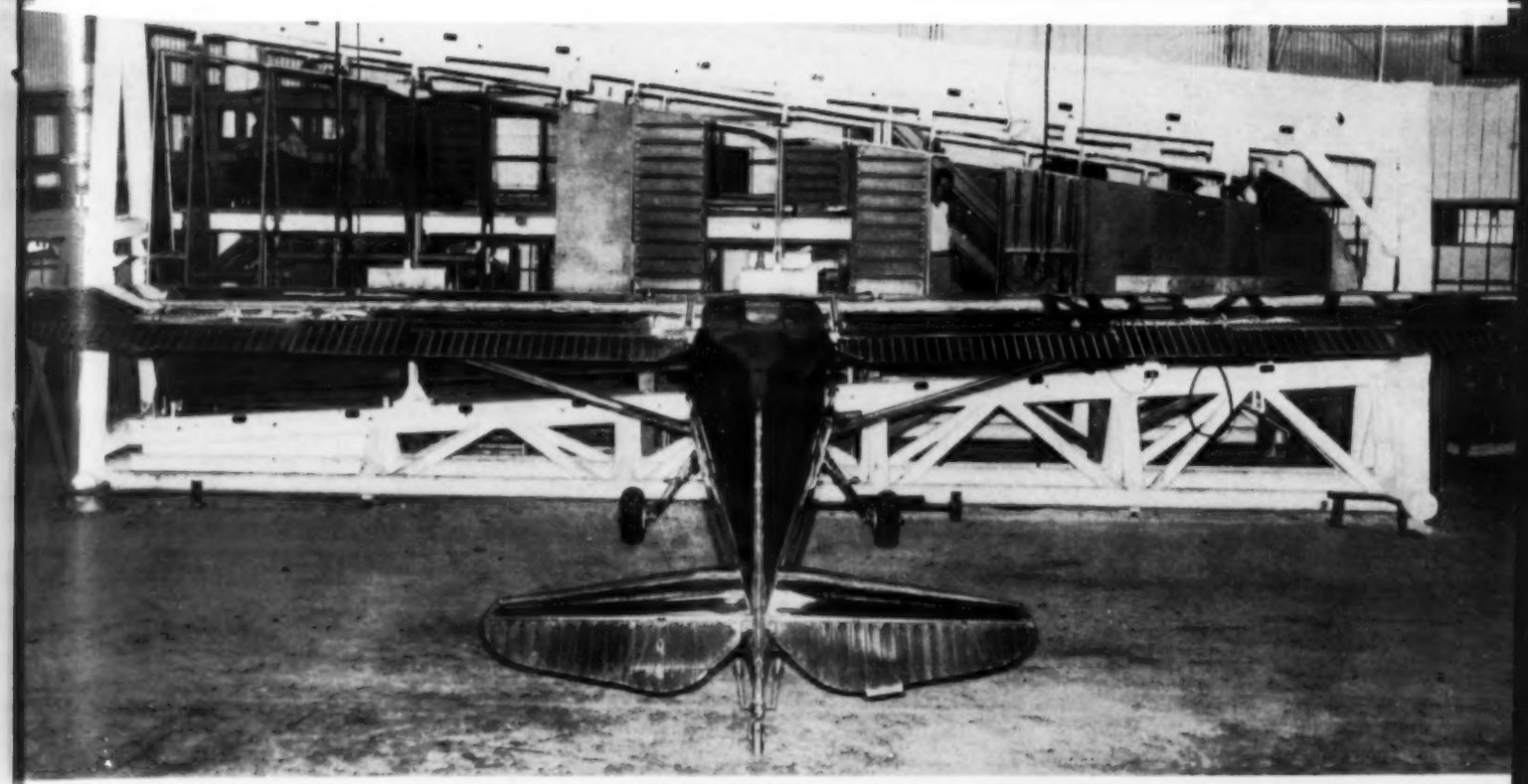
FOR the third successive year, Bonanza owners have had free factory inspection service offered to them by Beech service teams touring the country on a city-to-city schedule. This service after the sale has been expanded each year due to its contribution to satisfactory ownership of Bonanzas.

Beech distributors are notified far enough in advance of the factory visits so that all owners may be offered individual appointments for free inspections. By meeting the factory service representatives at the appointed time in the distributor's shop, Bonanza owners not only receive the free inspection but are able to discuss techniques and trends in aircraft operations and maintenance with the experts. Thus the owner and the factory are brought into closer relations, through the distributor.

Factory service representatives on tour report more and more utilization of Bonanzas by owners. This reflects greater usefulness of private airplanes in business and industrial operations, since most Beechcrafts are flown by business men. Because production is now limited, meaning that new plane replacements are becoming fewer, emphasis is more on preventive maintenance than ever. ★ ★ ★

BEECHCRAFT FACTORY SERVICE TEAM VISIT to San Antonio, Texas, coincided with the first anniversary of Alamo Aviation, Beech distributor there. Scenes above are in Alamo's 40,000-sq. ft. hangar. At top, Newest Customer Daisy Chapman Heard is shown operation of Bonanza landing gear by Dick Sullivan and Bill Simpson of Beech. Other photo shows Oldest Customer Harry Dye of Hiawatha Oil Company, with Alamo Service Manager Wilson Moore and the factory team. Alamo Aviation officers are John Cape, president; John Brownlee, vice president - general manager, and J. J. Czar, treasurer.
—(Alamo Aviation Photos.)

TEXAS CAP WING COMMANDER E. O. RUSHING was one of many Bonanza owners getting a factory inspection at shop of Jim Gray, Dallas Beech distributor on Love Field. He's shown atop wing at right while Gray handles the inspection form for Beech Representatives Bill Simpson and Dick Sullivan. D. A. Cody is service manager at this expanding operation.
—(Gray Aircraft Service Photo by Squire Haskins.)



Convair has replaced Silvaire as Luscombe's watchword. Here's one of the last Silvaires produced in the Luscombe factory, facing a jig in which elevator assemblies are produced for the Convair B-36 bomber. It takes two of these assemblies to make one elevator for the world's largest bomber. —(Luscombe Photo.)

Luscombe Conversion

ONE lightplane factory which has converted completely to military production, except for essential spare parts to keep existing airplanes operating for owners in the field, is Luscombe.

Following its reorganization under Temco management early in 1950, the Texas factory re-activated its production of an improved 2-place Luscombe Silvaire Deluxe featuring such innovations as flaps and swing-engine mount. Still other refinements were being considered by its engineers and Luscombe appeared headed back towards its former position as a top-notch producer in the lightplane industry.

But with Korean hostilities, the management announced an abrupt change in Luscombe's plans. Now Convair has replaced Silvaire as the company watchword: The former lightplane factory is now mass-producing elevator sections for the world's largest bomber, the Convair B-36. It is also manufacturing a wide variety of door assemblies for the B-36 and is turning out contracts on smaller items for other military aircraft manufacturers.

At the end of May, employment was close to the 500 mark, highest it's been since the lightplane boom days of 1946. There were immediate openings for at least 100 additional personnel.

★ ★ ★

The Luscombe factory near Dallas as it looks today. At right is its recently finished hard-surfaced landing strip. Military aircraft work has replaced lightplane production. But Luscombe and Temco Swift parts are still supplied from its facilities, which are being expanded. —(Luscombe Photo.)

Beechcraft 35

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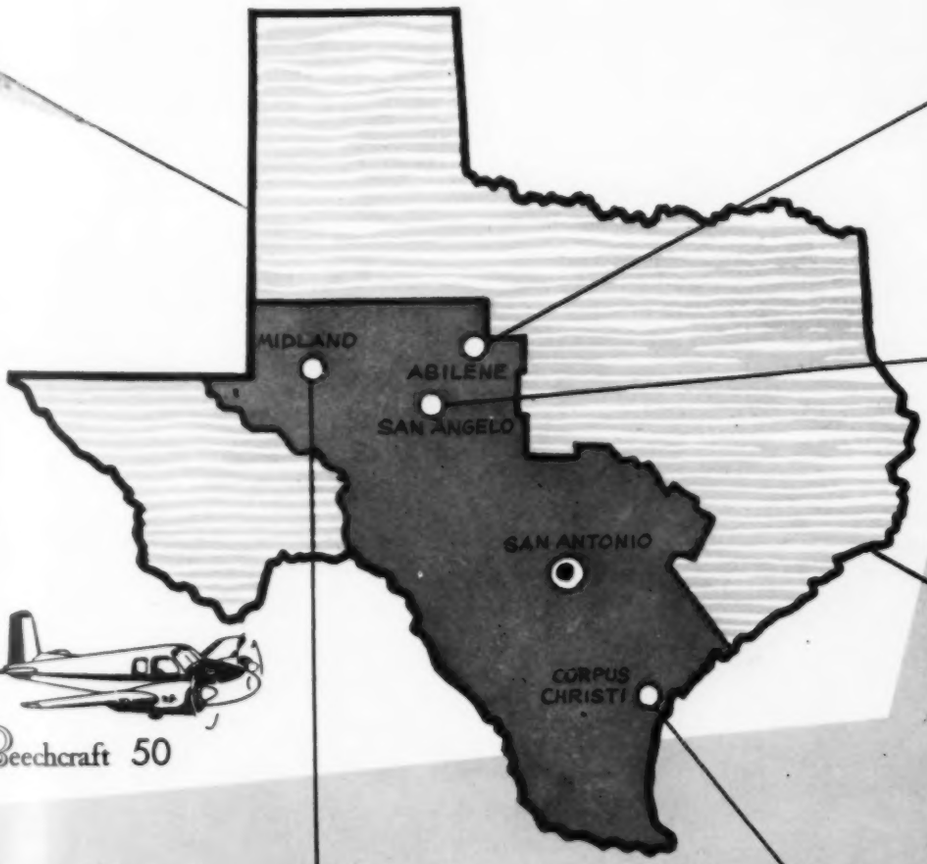
Beechcraft 18

The Authorized Alamo Aviation Beechcraft Dealers listed below are ready to serve your Beechcraft sales and service needs. These firms were chosen for their outstanding sales and service records and facilities. Their long specialized experience in the aviation industry qualifies for your complete confidence. Your visit to anyone of the operations listed hereon will be rewarded with unparalleled attention to your individual requirements.



Beechcraft 50

ABILENE AVIATION
Municipal Airport
Abilene, Texas
H. S. Higginbotham
Mgr.

SAN ANGELO FLIGHT SERVICE
Municipal Airport
San Angelo, Texas
Guy Lavender, Jr.

ALAMO AVIATION, Inc.
and the Beechcraft dealers listed serve 97 counties in central, southern and western Texas.

GLOBER AVIATION CO.
Midland Airport
Midland, Texas
Bill Glober, Owner

ROD MORE AVIATION SERVICES
Cuddihy Field
Corpus Christi, Texas
Rod More, Owner

flight pictorial

PIPER TRI-PACER has proved successful in all areas of the country, with the Piper factory reporting a backlog of orders. The 4-pl. tricycle has a 125-hp. Lycoming and cruises better than 120-mph. Range is 580 mi. with its 36-gal. fuel supply. Interconnected controls permit use of wheel alone if desired. In a demonstration of its simplicity, a Tri-Pacer was soloed recently by a housewife, mother of two children, the morning after she took her first flying lesson.

—(Piper Aircraft Photo.)

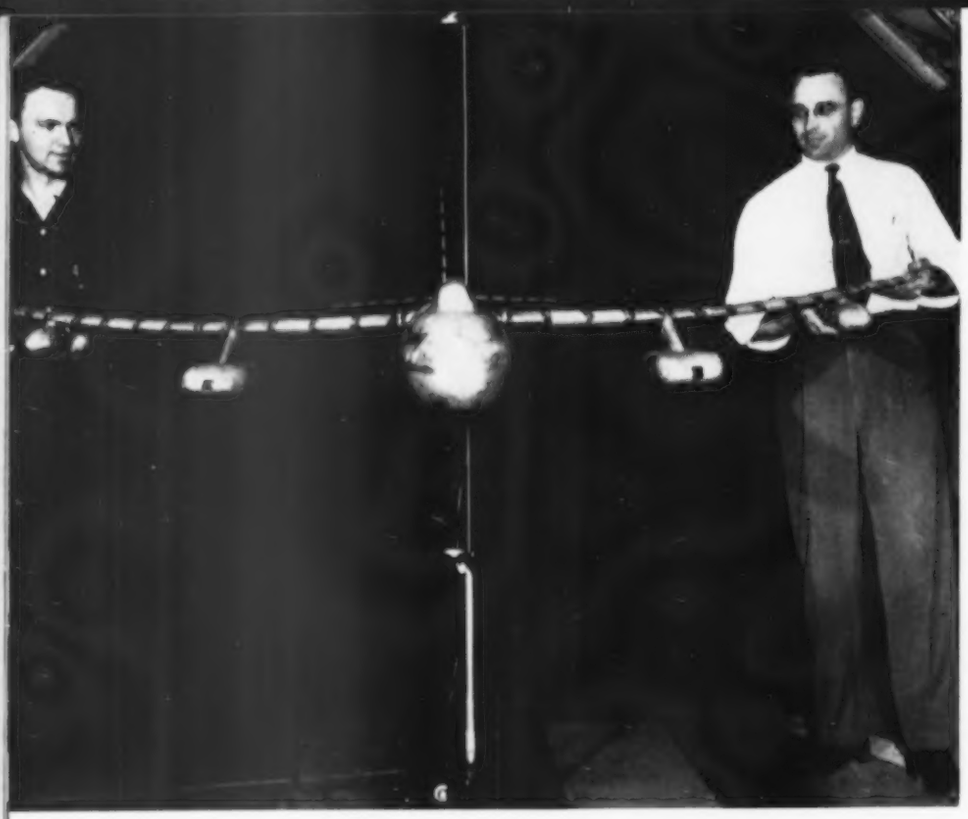
TWIN-JET FRENCH LIGHTPLANE is the latest development from an original experiment of mounting a small turbo-jet engine on a sailplane. The 2-pl. double version is the Fouga Gemeaux. It is being widely exhibited in France. The original version was demonstrated at Miami, Fla.

—(Airmondial Photo.)

MISSIONS ... and MIRACLES!
U.S. Marines Watch In Awe As Big Bridge Floats Down
World's First Air Dropped Bridge Spans Carried By 119's To Chosin Reservoir Battle
HQS, FEAF CARCOM, (A.T.) The world's first air drop of a bridge was made today by aircraft of the FEAF's Combat Cargo Command, was eight spans totaling 16 tons were parachuted near Kotori-Ri in North Korea.
United States Marines, fighting bitterly against hordes of Chinese Communist Troops in the frozen north, gazed up in awe as the huge C-119 "Flying Boxcars" of the 314th Combat Cargo Wing broke through an overcast and spilled out the huge pieces of equipment. Large 100 foot parachutes supported the spans as they drifted slowly down, landing near the determined leathernecks.
Mission successful, pilots returning to this

ENGINE AND AIRPLANE CORPORATION
FAIRCHILD
Aircraft Division
HAGERSTOWN, MARYLAND

Fairchild Engine, Guided Missiles, and Stratos Divisions, Farmingdale, N.Y.



STRUCTURAL ELASTICITY problems of wind-tunnel testing in the Boeing B-47 Stratojet development were solved by a unique model of the swept-wing craft. Possessing similar aeroelastic properties as the production airplane itself, the model actually "flies" up and down the rigid steel rod in center of photo as tunnel crew manipulates electrically-controlled surfaces. Flexing of wing, tail and fuselage was studied, with flutter, control moments and other factors influencing B-47 aerodynamic behavior.
—(Boeing Photo.)

flight pictorial

BEAUTY AND THE SAVAGE were posed at North American Aviation when name for AJ-1 Navy attack bomber was chosen by Composite Squadron VC-5, U. S. Atlantic Fleet. Winning name was submitted by Lt. Commander Clyde Fairless, flight surgeon who lost his life later in line of duty. Savage is heaviest U. S. carrier-based airplane, is powered by two piston and one jet engine, has top speed in excess of 350 mph. The beauty is contributed by pretty Neva Wilson.
—(North American Aviation Photo.)

FIRST TRANSATLANTIC DELIVERY of a DeHavilland Dove to Distributor Jack Riley at Longview, Texas, was flown by Pilot Gilbert Reid and Radio Officer A. E. Mock of Fleetway, Inc., of California, ferry contractors. Flight was via Reykjavik, Bluie West, Goose Bay and Montreal to Toronto, was completed against headwinds in 28 hrs. flying time. Total fuel capacity was 265 gals. in standard wing tanks and baggage compartment auxiliary tank. Doves are now being ferried to Riley at a rate of 3 monthly, increasing to 5 monthly in September
—(DeHavilland of Canada Photo.)

Everyone is Looking to LATIN AMERICA

With magnetic attraction Latin America has seized the interest of the Who's Who in commerce and the smart-set vacation crowd. It's today's land of business opportunity—a vast market—a great source of supply. It's today's greatest playland, too, where ancient civilizations rub elbows with the ultra-modern, where historic landmarks contrast with elegant hotels, smart shops and gay casinos. Now, as never before, those in the know have discovered there's business to be done, there's more pleasure and fun—in Latin America. Yes, all eyes are on Latin America.

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—the U.S. airline that has set new standards of travel luxury, of travel economy to all Latin America. Those who demand the utmost in comfort and service choose Braniff's famous *"El Conquistador"*, a 300 mile-an-hour DC-6 with luxury lounges by day, bed size berths by night, plus gourmet meals, cocktails, hors d'oeuvre, afternoon tea — all the trimmings. The budget-minded select Braniff s *"El Intercontinental"*— no berths, no cocktails, but solid comfort, full-reclining seats in a 250 mile-an-hour four-engine Douglas Skyliner—and at 25% below regular fares. Twenty-two years of "know how" insure your comfort, safety and satisfaction when you fly Braniff. For your trip to Latin America have your Travel Agent route you via Braniff.

Ω OMEGA—Official Braniff Timepiece

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Civil Aviation Mobilization Chiefs Named

DIRECTORS have been selected for three divisions in charge of emergency mobilization of civil aviation resources under General Donald Connolly, special assistant to Undersecretary of Commerce Del Rentzel. They are:

George E. Haddaway, editor and publisher of FLIGHT MAGAZINE, who has taken temporary leave from the magazine to devote full time in Washington as chief of the General Aviation Operations Division.

George Gardner, president of Northeast Airlines, who is chief of the Air Transport Division.

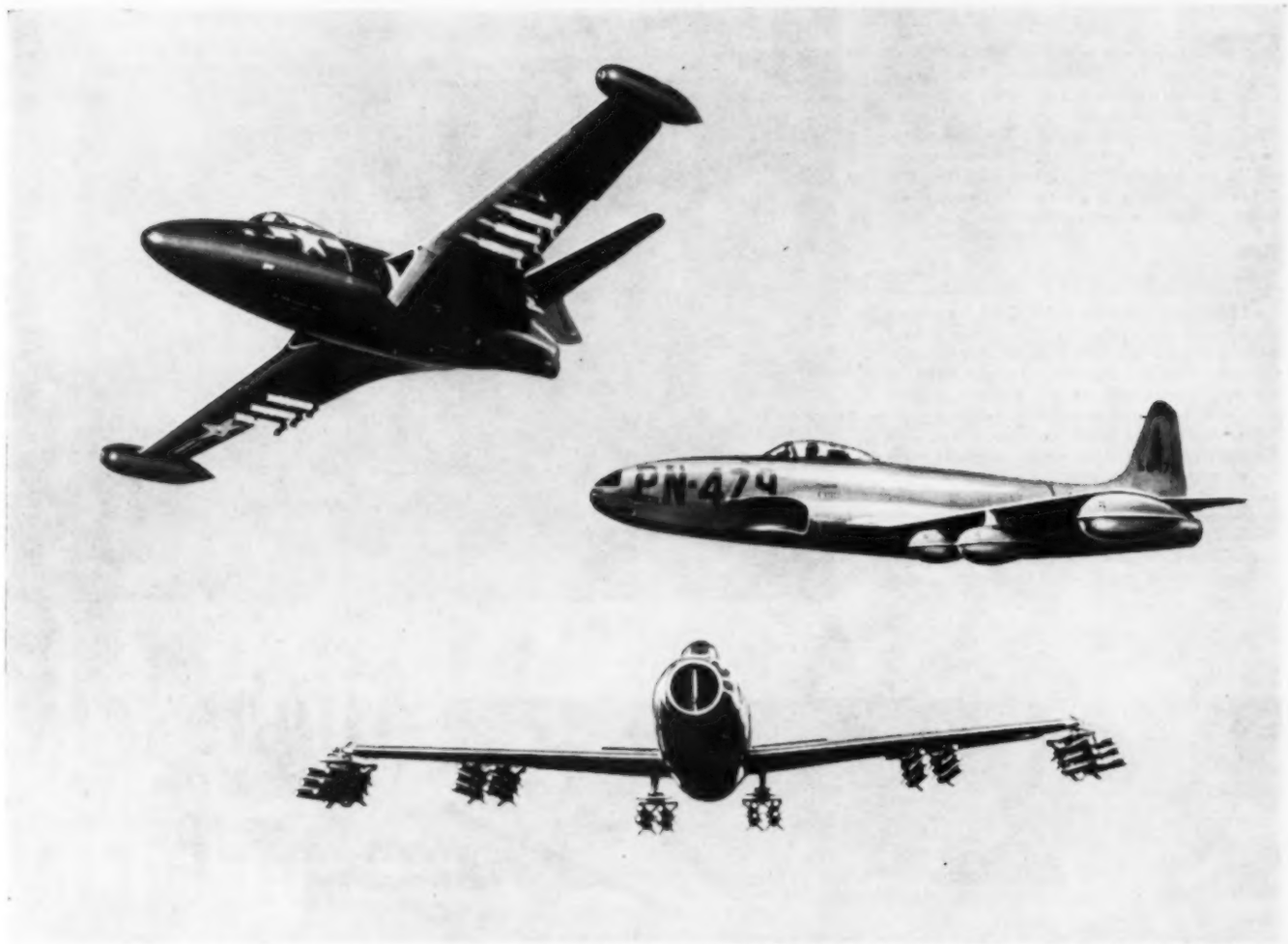
Charles Horne, CAA administrator, who will serve as director of the Airports and Airways Division.

In addition, an advisory council of civil aviation leaders has been named to serve with Connolly. It includes J. H. Carmichael, president of Capital Airlines; Wayne Weishaar, secretary-treasurer of Aeronautical Training Society; Charles Parker, National Aviation Trades Association executive secretary; A. B. McMullen, National Association of State Aviation Officials executive secretary; Joseph T. Geuting, Jr., AIA Personal Aircraft Council manager; J. B. Hartranft, Jr., AOPA general manager; C. C. Thompson, Airport Operators Council executive secretary; Nathaniel F. Silsbee, Corporation Aircraft Owners Association executive secretary.

Private-owner and non-scheduled aviation comes under the General Aviation Operations Division headed by Haddaway. He is responsible for directing mobilization of corporate, industrial, business and agricultural aircraft, and the plant facilities of fixed-base operators, including training operations, overhaul and maintenance bases. He must plan and place in operation a program to insure the maximum utilization of the nation's civil aviation resources, except air carriers. ★ ★ ★

READY FOR SONIC BARRIER TRIALS, Convair XF-92A is shown at San Diego factory after receiving a new Allison J33-A-29 turbojet with afterburner. Considerably more powerful than formerly (it made over 80 flights with a smaller, 5,200-lb. engine), it is being tested by USAF and NACA pilots. World's first delta wing airplane, XF-92A has 60-degree wing sweepback. Elevons combine aileron and elevator controls.
—(Convair Photo.)

flight pictorial



Illustrated above—Grumman F9F-3 Panther, Lockheed F-80 Shooting Star, Republic F-84E Thunderjet

Allison Jet Power

"First" in Korea

FROM the very onset of hostilities in Korea, Allison jet-powered fighters have flown more missions, downed more enemy planes and inflicted greater damage to troops and equipment than all other fighter aircraft in the theater.

Starting with the first hours of combat, when they were the only jet fighters available to the Air Force, Lockheed F-80 Shooting Stars have flown 75,000 hours with no aircraft loss due to engine responsibility. They have proved effective in attacks on ground troops and have consistently outfought MIG-15's.

Doing a similar job, Grumman F9F-3 Panthers in one month averaged 97% combat availability from the Navy Carrier, Valley Forge—a record never before equaled.

F-84E Republic "Thunderjets" are also blasting enemy air and ground forces with guns, bombs and rockets. During a two-week period in this activity, only one Allison engine change was made in the entire 27th Fighter Escort Wing.

Pilots and crews agree that it is the experience coming from time in the air which builds confidence. The dependable Allison performance results from a solid background of jet engine experience — more than 300,000 hours in the air.

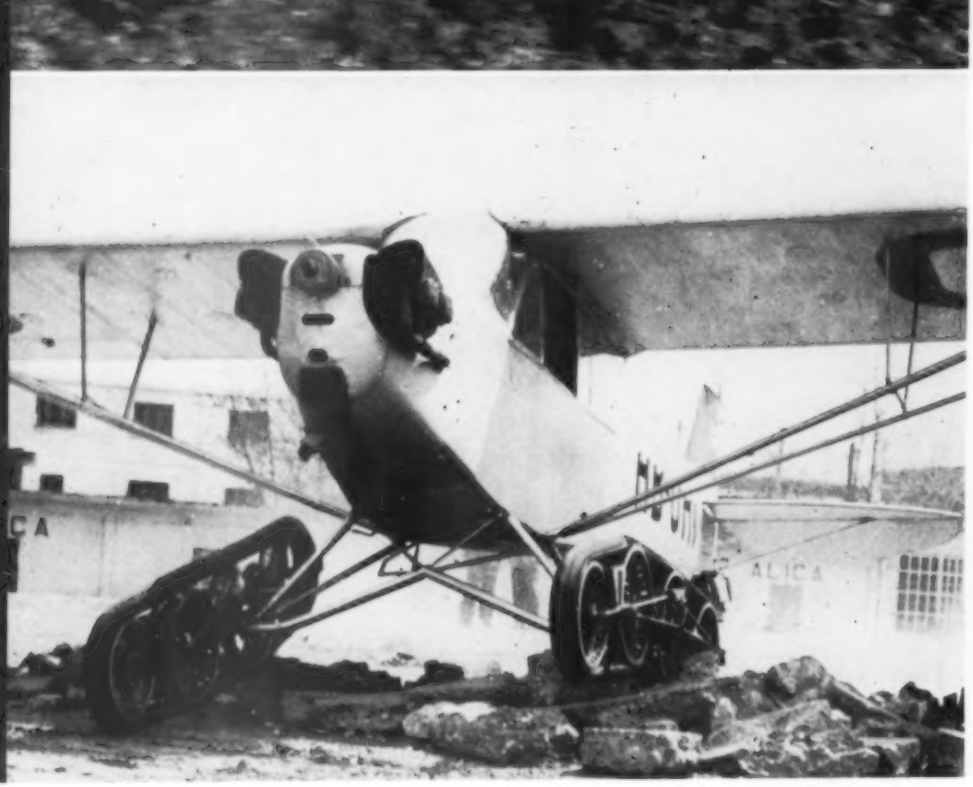
GM
GENERAL MOTORS

Allison

DIVISION OF GENERAL MOTORS
INDIANAPOLIS, INDIANA

EXECUTIVE TRANSPORT PICTURE WINDOWS, the first approved by CAA, feature a Lodestar converted by Airesearch at Los Angeles for Mississippi River Fuel Corp. Windows are 4.5 ft. long and over 12 ins. high, three times the size of ordinary Lodestar windows, requiring new stress design. That's Vicki Wilson doing the looking. Interior of this Lodestar has 8 seats including three swivel chairs; two folding desks, a galley, restroom and bar.
—(Airesearch Photo.)

CATERPILLAR GEAR FOR CUB has been developed in Italy by Count Giovanni Bonmartini for the EST Co., of Switzerland. Called "BTTG Tubular Track Landing Gear," it consists of an endless rubber belt and four lightweight wheels on each strut. Note how gear absorbs shock and flexes over obstacles while aircraft attitude remains undisturbed. Take-off distance in rough terrain is said to have been reduced and landings are made in three-fifths of the normal distance necessary. Track is said to resist slipping off even in cross-wind landings.
—(EST Co. Photos.)



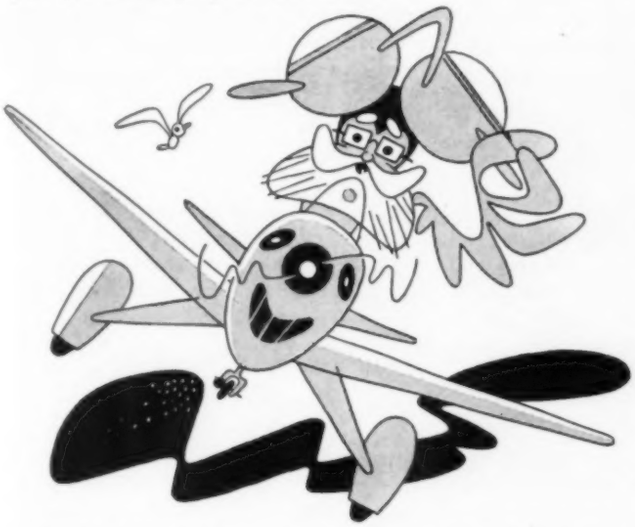
flight pictorial

RYAN SERVICE CLINICS for Navion owners are again being conducted this year by Walter K. Balch, Ryan service manager, and William P. (Doc) Sloan, Ryan sales executive, shown below. Visiting cities throughout the country, they will confer with owners and give air and ground checks, recommending latest maintenance and flight techniques.
—(Ryan Photo.)

The Birdmen's Perch

Watch 'er, Grampa, she's a rarin'!

Though this may come as something of a shock to you young buckos, flying isn't just for kids!



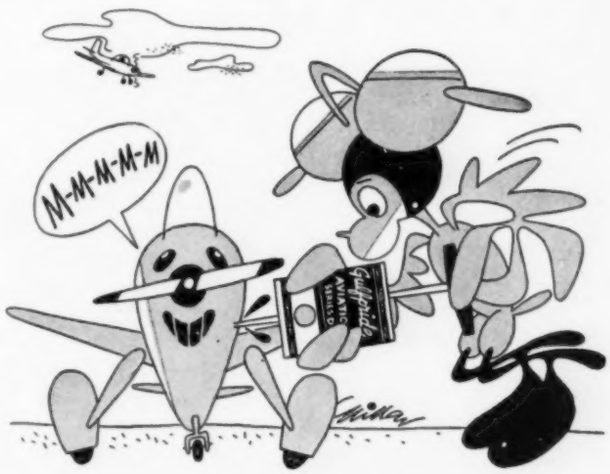
Fact is, there are a few active pilots over 80 and thousands more over 60.

And here's the pay-off! CAA records show that student pilots (we use the term advisedly) between 50 and 55 are the safest pilots of all—with a safety record five times better than that for student pilots in the 20 to 25 age group.

Next time you see a flowing white beard where a flying scarf should be, step aside, Junior—there goes a real flyer!

SPEAKING OF OLD-TIMERS—

Here's some sage advice about trouble-free flying! Gulfpride



Aviation Oil—Series D—is just the shot in the crankcase your plane needs!

It's the finest detergent dispersant oil for horizontally opposed engines there is—the only aviation oil put through Gulf's exclusive Alchlor process to remove those extra carbon and sludge formers!

Ask for Gulfpride Aviation Oil—Series D—and increase periods between overhauls up to 100%!

GULF
AVIATION PRODUCTS

Gulf Oil Corporation . . . Gulf Refining Company

IT HAPPENED ON 3105

(Continued from page 17)

6:00: Pilot Charlie reported he was beginning to break out of the overcast again. He was advised to get clear of all clouds and report any landmarks visible. He replied he was flying a heading of 93 degrees west of Columbus and could see a double railroad track. Cramer suggested he follow the railroad and continue to report landmarks. Pilot Charlie said he saw a road, then what appeared to be a courthouse and a drive-in theatre. Cramer deduced these were on Broad Street and advised the pilot to keep to the left of the street to avoid tall buildings (up to 1,200 ft. above see level) on the right side. Suggested that he turn 15 degrees to his left and watch for the airport light beacon.

6:25: Pilot Charlie reported he was in sight of the airport. Tower was then notified by Cramer and the pilot was told he was clear to land. Columbus weather now was 900 ft., overcast, visibility 2½ mi., with fog. *Zero Zero King circled the field.*

6:37: Zero Zero King finally made it in and landed on Runway 30.

A check with CAA later showed that, throughout the nation, its communicators average handling three such emergency cases per day throughout the year. Based on CAA and Navy experiments with VHF/ADF, it is estimated that the 2 hrs. 22 mins. spent in locating and landing Zero Zero King could have been reduced to a matter of minutes through the use of VHF-ADF. CAA has been studying plans for the installation of VHF azimuth indicating devices at field facilities.

★ ★ ★

JUST AMONG OURSELVES

(Continued from page 9)

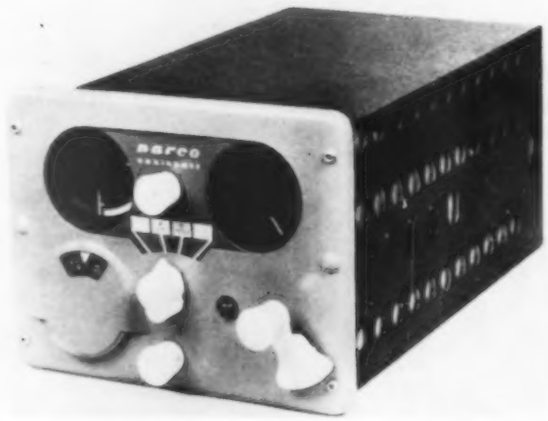
service that income from the air mail actually exceeds the payments for carrying the mail, that the curve of income long ago crossed over the expense or "subsidy" line.

The significant thing about the Southwest Airways case is not so much that the company initiated the proceeding for cutting its own mail pay but that Southwest is one of the new postwar local service operations certificated on a temporary basis in order to establish air service into scores of smaller communities. The Southwest Airways case proves that the Board has been progressive and far-sighted in permitting the expansion of scheduled services into our smaller communities, and their original prediction that traffic could be generated which would reduce payments from the subsidy category to actual payment for services rendered the Post Office Department was correct.

Commending Southwest Airways, The Civil Aeronautics Board stated: "By initiating the proceeding itself, the carrier has not only shown good faith as to its desire to decrease its dependence on mail pay support, but has also had the advantage of a procedure whereby the old rate will be replaced promptly by a final rate under which such advantages as may accrue in the form of good earnings under economical and efficient management will inure to the carrier."

We concur 100 per cent with the CAB that Southwest Airways' mail rate action is exemplary—a case of extreme good faith. Perhaps some kind of recognition can be given both the carrier and the Board during the 1951 Local Service Airline Seminar at Purdue University June 21-22, where many of the current problems to be discussed will revolve around ways and means to strengthen short-haul local air service through increased patronage and efficiency and decreased costs and mail payments. The Southwest Airways case certainly is one of the most heartening occurences in the postwar effort to bring the advantages of air transportation to all. ★ ★ ★

New NARCO OMNIHOMER Model VHT-1



The new OMNIHOMER is engineered into a single 8½ pound package and only 5¼ x 6⅞ x 10¼ inches in size.

Equipment includes the complete set containing VHF receiver, VHF transmitter (with two crystals), OMNIHOMER, dipole and whip antennas, lead-ins, the microphone and headphone jacks and speaker lead cable.

The NARCO OMNIHOMER is now available from AIR ASSOCIATES, Dallas stock, at $450 plus tax. Discount to Dealers. Write or wire Air Associates, Love Field, Dallas, for further information.

Air Associates, Dallas Branch, announces the availability of the new NARCO OMNIHOMER VHT-1, a completely new, low-cost unit that brings the advantages of VHF communication and navigation within the means of every aircraft owner.

AIR ASSOCIATES Inc.

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POISON on the NIGHT SHIFT

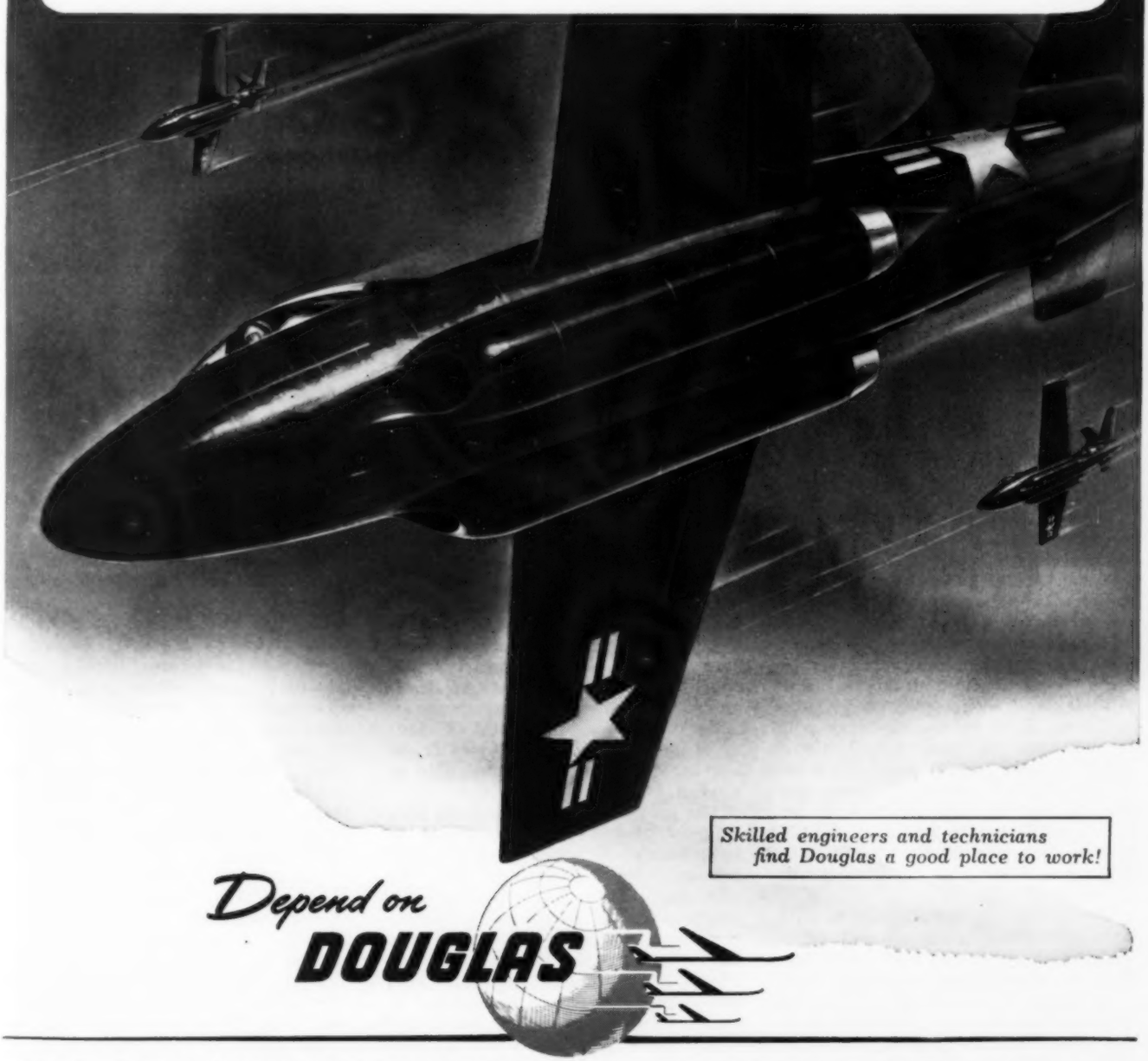
F3D Skyknight—Navy's first jet night fighter—now in production at Douglas El Segundo!

On the blackest night—in the foulest weather—Navy airmen can now find and fight enemy planes, even though they're eight miles up.

The new aircraft that gives our Navy this round-the-clock combat effectiveness is the Douglas-built F3D Skyknight. It is the *first* jet fighter specifically designed for night combat.

Equipped with electronic devices for early detection of enemy aircraft, the Skyknight is adaptable as an attack fighter, long-range patrol or reconnaissance airplane, or as a long-range fighter escort.

The Skyknight is just one of many planes that Douglas is designing and building to help keep America *first* in the air. It is further evidence that *Depend on Douglas* is more than just a famed slogan. Douglas Aircraft Company, Inc.



Skilled engineers and technicians find Douglas a good place to work!

Depend on **DOUGLAS**

WORLD'S LARGEST BUILDER OF AIRCRAFT FOR 30 YEARS ➤ MILITARY AND COMMERCIAL TRANSPORTS
FIGHTERS ➤ ATTACK PLANES ➤ BOMBERS ➤ GUIDED MISSILES ➤ ELECTRONIC EQUIPMENT ➤ RESEARCH

RE-WORKING OF LANDING STRIPS AT COSTELLO ISLAND in Possum Kingdom Lake near Fort Worth, Texas, marks preparations for largest Summer season yet at the popular airmen's resort. Bedford Jones, owner, brought road machine across lake on a ferry barge to put his strips in shape. Island is accessible only by airplane or boat. —(Squire Haskins Photo.)

Questions and Answers for Airport Operators

Helicopter Traffic Planning

QUESTION: If helicopters come into more general use in large centers of population as air taxis, bringing passengers to airline terminals, what will be the effect on airport design problem? What about traffic patterns?

ANSWER: That question cannot be answered firmly now. We do not believe they will follow the traffic patterns of fixed-wing aircraft. As more air taxi systems are certificated, probably a general scheme for operation will come.

From the best information we can get where these aircraft are now being used, their routes are very carefully and specifically laid out by Air Carrier of CAA since in IFR conditions for scheduled aircraft the helicopter may be operating between the downtown terminal and the airport involved under contact conditions at very low altitudes and with comparatively low visibility. Such routes probably will be laid out so meticulously along areas of open terrain such as parks, boulevards, railroad rights-of-way and the like that they may not be as direct as one would expect. In fact, they may include such directions as "turn left at Sixth and Main and continue South to Fourteenth Street".

The reason for this is that the altitude at which helicopters will move under such conditions may be so low that the aircraft must be able to land without damage or injury to the passenger before the auto-rotation feature can come fully into effect.

It is expected, when the pilot calls into the tower, the operator handling the approach of fixed-wing aircraft on the Instrument Landing System will be able to see the helicopter and know it is in no danger of interfering with the fixed-wing aircraft. In all probability the design of the traffic pattern for the helicopter will be such as to avoid the approach zones under IFR conditions for fixed-wing aircraft and since the landing can be made in limited space it is expected that it will be adjacent to the terminal with well defined clearances. In fact such clearances will have to be set up for the one or more points away from the airport which will be served by the helicopter. It is probable that there can be no static distances of clearance if that point is on the ground because of the varying conditions of wind velocity and turbulence caused by some configurations of buildings in business and hotel districts. Sometimes these cause a very strong venturi action which will influence points of destination and routes where minimum altitudes are used. Under CAVU conditions, of course, more direct flight and higher altitudes will obviously be applied.

The operation of such services may in many cases require a change in local ordinances which were designed primarily for fixed-wing aircraft. The advantage of the time saved by such service may very reasonably produce a considerable number of applications for such service and it is expected that the primary dictation of safety will work out patterns for helicopters. It is not believed that it will create any great change in terminal and runway design since, through its very nature, the rotary wing aircraft can operate with a minimum of pavement.

Expediting City-to-Airport Traffic

QUESTION: Our new municipal airport is being built about 14 miles from town. While I'm for close-in airports, I'm also for letting all-weather safety determine the distance. But there will be a problem in getting passengers to and from the new field with minimum delay. Can you recommend any ways to speed up this ground handling of airline passengers?

ANSWER: Generally speaking, the answer is good highways and streets leading to airports. Studies show that traffic interferences on city-to-airport highways which lie wholly within boundaries of our cities are the principal time-consuming elements in reaching airports, rather than deficiencies on highways in rural areas.

This was brought out in a recent study of an airport-to-city highway 14.1 miles long. Two and one-half miles consisted of better-than-usual (nevertheless, sub-standard) city streets; the other portion, 11.6 miles, consisted of a magnificent, modern expressway through semi-rural areas.

The semi-rural portion carried tremendously heavy traffic to outlying suburban areas. Even though traffic was dense and despite speed limitations invoked by traffic officials which were below the highway's speed-capacity, the modern portion was covered at a rate requiring only one-third as much time per mile as was required on the less modern section of the in-town portion, consisting of two and one-half miles. In other words, despite traffic regulations, and very dense volume of automobiles and trucks, traffic moved at the rate of 40 mph. on the modern portion; this was reduced to about 16 mph. within the city, during peak hours of traffic. This reduction was due to an outmoded design of the city's streets.

The study shows clearly that factors other than distance to our airports are far more time-consuming than are miles alone. Stated differently, by correcting highway and street deficiencies, a reduction in travel-time to our airports usually could be effected

Airmen's Calendar

June 21-22—1951 Local Service Airline Seminar, Purdue University, Lafayette, Indiana.

June 27-29—Mid-year meeting of ADMA officers and directors, The Homestead, Hot Springs, Va.

July 15 — Jaycee Western Flight Breakfast, Ellensburg, Washington.

August 15-19—Fifth Annual All-Woman Transcontinental Air Race, Santa Ana, Calif., to Detroit, Mich., sanctioned by Ninety-Nines, Inc., Mardo Crane, Race Committee chairman.

August 22-26 — International Convention, the Ninety-Nines, Mackinac Island, Michigan.

to a greater degree than merely by decreasing the distance factor without correcting the highway's deficiency in design and capacity.

Airport Markers for Motorists

QUESTION: Do highway - airport directional signs help increase an airport's use?

ANSWER: They most assuredly do. The information value of highway directional signs needs no explanation. Figuratively, they speak for themselves. Successful merchandisers have long realized the validity of an old business maxim, "The customer does not know what he wants until he sees it." In a very broad sense, our airport managers are doing a merchandising job. The successful ones realize that the installation of directional marker signs to their airports is a most efficient means for making it easier to sell aviation to more customers at our airports.

CAA has developed standard designs of relatively low-cost highway directional markers. That agency recommends that such signs be installed at prominent and numerous street and highway intersections in and beyond cities' boundaries. ★ ★ ★

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New prop performance

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Lightweight Actuators...

with Strong-arm Power

or a Watchmaker's Skill!

Whether you want to raise the heaviest landing gear or exercise the most precise positioning control, Breeze actuators can meet your exact requirements. A pioneer in actuator design, Breeze has the engineering experience, the production capacity and skill to solve problems quickly, to meet your delivery schedules. So whatever you want to push, pull, raise, lower, hold, release, twist or otherwise control, it pays to talk actuators with Breeze.

WRITE TODAY outlining your control problem; or submit your sketches. Our engineers will gladly assist you.

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Aero-Seal Vibration-Proof Hose Clamps

Flexible conduit and ignition assemblies.

Multiple contact connectors to meet government specifications.

Job engineered, welded - diaphragm bellows.

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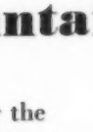
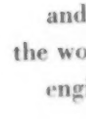
Hands that dwarf mountains

When the airman wings far out over the limitless seas, or in the dead of night above cloudbanks that hide the earth . . . what confidence he must place in the accuracy and dependability of his aircraft instruments and controls! Such confidence Kollsman has earned the world over through years of precision workmanship and engineering skill. Yes—when mountain tops must be dwarfed and sea lanes narrowed —the hands of skilled Kollsman craftsmen have unfailingly furnished the tools.





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SAFETY SEND-OFF

(Continued from page 15)

mine whether this should be added to production-model airplanes.

At about 55 mph., and after a 1,400-ft. run, he could feel the rudder's effectiveness coming into full play and shoved the throttle all the way to the stop, getting 3,200 rpm. and quick acceleration. The nose was nibbling at him but Bantle had 15 degrees of nose wheel deflection and complete rudder effectiveness as 70 mph. was reached (he was now 2,000 ft. down the runway). At 90 mph., and about 2,700 ft. from start of the run, he let the Commander fly itself off, quickly retracting his gear as the Lycoming revved all the way up to 3,400 rpm. and maximum take-off power. At 95 he began a slow climb.

"You're off at zero-five-one-five," Will Rogers Tower assured him. "Good morning and we hope you make it!"

We were in the air one minute later with the Bonanza to join the Aero Commander and behind us the 195 followed as closely. Inter-plane communications had been provided through the installation of 122.8-megacycle crystals. But to keep from over-doing it, we had set up a schedule for standing by only on the hour and half hour.

Six minutes after leaving the runway, the Aero Commander had made history by being the first twin-engine aircraft of our knowledge—commercial or military—to take off at gross weight and climb to cruising altitude with the left engine's propeller completely removed before starting its take-off run. We had arrived from Dallas too late to witness the actual

Company Test Pilot Bert Bantle (left) and General Manager Ted Smith, who designed the Aero Commander, discuss the single-engine take-off while Ernie Barr, final assembly group leader at the factory, tops the tanks. Note bare hub on left engine with prop gone.
—(FLIGHT MAGAZINE Photo.)

weighing in of the airplane to establish its loading, but it had been certified to us at our request by Wayne Thomis of the Tribune, who was there at the scales. "As a matter of fact," Wayne told us when we finally did arrive, "it is overloaded 53 lbs." Normal gross weight is 4,800 lbs.

Critical point in the single-engine take-off was while the Aero Commander was still on the runway. This occurred at a speed between 55 and 70 mph., when full throttle was used. If directional control had been lacking, there was plenty of space to chop power and taxi back for another try, since only 2,000 ft. had been used up at that point.

A more perfect day for the flight could not have been selected during weeks of map watching. This one rolled around after only 4 days of waiting. Two low pressure areas, one behind us and to the Northwest, and the other far up in the Northeast, plus a high pressure area centered in Tennessee, had on the eve of take-off lined up favorable winds all along our 1,160-mi. course to Washington, D. C. Cruising altitude of 3,000 ft. offered the best deal. Tests had proved the ideal power setting to be 23 inches and 2,750 rpm., or about 70 per cent of power as recommended by Lycoming for performance cruise with its 260. This gave the Aero Commander an indicated air speed of 125 mph. and a true air speed of 132 mph. at 3,000 ft., with fuel consumption less than 14 gals. per hr. Given contact weather to avoid excessive climbing, the Aero Commander appeared to have it made once in the air. For it carried 160 gals. of fuel, sufficient for 11 hrs. 45 mins. of cruising.

Wind conditions expected were best indicated by the flight plan filed just before take-off by Co-pilot Morris. It was for 8 hrs. 12 mins., allowing for 10-mph. wind effect. But we knew we had a head start on that by the time our third check-point rolled up. Ground speed was running 144 mph., giving us benefit of about 12 mph. wind effect. Omni ranges were splattered all over the map on both sides of our course, but as usual we couldn't raise a voice on any of them until we hit Evansville, some 573 miles from take-off. By that time the Aero Commander's ground speed had fluctuated as high as 155 mph. and as low as 141 mph. So it looked as if Emmett's flight plan was a little shy of actual wind conditions.

George Pew pulled some power to allow for refueling the Bonanza at Evansville while Bert and Emmett kept grinding on the Aero Commander's big fuel supply. We gained about

CONTINENTAL
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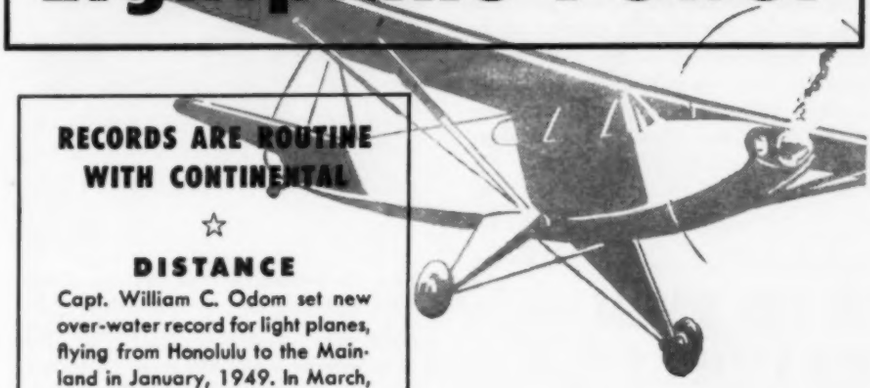

RECORDS ARE ROUTINE WITH CONTINENTAL

☆

DISTANCE

Capt. William C. Odom set new over-water record for light planes, flying from Honolulu to the Mainland in January, 1949. In March, Capt. Odom broke his own record, flying same Beechcraft Bonanza from Honolulu to Teterboro, N. J., 5,004 miles.

☆

ENDURANCE

Woody Jongeward and Bob Woodhouse landed their Aeronca Sedan at Yuma, Ariz., Oct. 10, 1949, after remaining aloft 1124 hours—or six weeks and five days.

☆

ALTITUDE

Sra. Ana Luisa Branger set officially-certified international altitude record of 24,504 feet in her Piper Special with Continental C90-8F engine on March 31, 1950, at Congressional Airport, Rockville, Md.

☆

SPEED

John Paul Jones of Van Nuys, Calif., broke midget plane speed record at Detroit-Wayne Major Airport Aug. 13, 1950, winning Continental Motors Trophy Race at speed of 187.785 m.p.h., in home-built plane with C85 Continental engine.

Not only in pilot acceptance, but chronologically as well, Continental is truly the first name in the field of power for utility aircraft. Continental gave private flying its first real boost by introducing the famous A-40 more than 20 years ago. And because it has consistently pioneered in the things that mean safer, surer flying, Continental is pilots' overwhelming first choice today.

Underscoring this leadership is the fact that major records in all phases of aircraft performance—distance, endurance, altitude, speed—are Continental-held. Of even greater importance from the owner's and operator's standpoint is the maintenance of established service wherever people fly. It is wiser today than ever before to choose a plane with Continental power.

ONLY CONTINENTAL BACKS YOU WITH — CONTINENTAL MOTORS — Powerfully on the Nation — AMERICA'S STANDARD — ESTABLISHED WORLD-WIDE SERVICE

Continental Motors Corporation
Aircraft Engine Division
MUSKEGON, MICHIGAN

20 mins. on them and asked Evansville Tower to have the gas crew ready for a quick stop. When we taxied in, we got the fastest service of our combined experience. Anybody passing that vicinity and in need of quick fuel should make Evansville a must stop. All we ask is that you call in a few miles out and let the tower give the boys on the gas truck a chance to be ready. Such service as we were given certainly deserves patronage, especially in times like these after so many operators have been through the wringer and are a shade limp.

In the Aero Commander, Bert and

Aero Commander's trim lines as silhouetted beneath the noon-day sun near the end of the 7-hr. 55-min. single-engine flight. This was in turbulent air close to the ground in the Allegheny foothills.
—(FLIGHT MAGAZINE Photo.)

Emmett made it over Louisville at 0955, 4 hrs. 40 mins. from take-off. This gave them an average ground speed of 149 mph. for the 690 mi. Since they had maintained an average true air speed of 132 mph., this revealed favorable winds had averaged about 17 mph.

Before reaching Louisville, they had noticed the effect of fuel consumption on reducing the Aero Commander's load. To maintain 125 mph. IAS when their gross weight dropped below 4,500 lbs., they backed off on power slightly by using 2,700 rpm. instead of 2,750 as formerly, holding manifold pressure at 23 ins.

Rough air was encountered after leaving the Ohio River. At first they let the airplane ride but as turbulence increased in the vicinity of Huntington, Bert began building up speed by holding the nose down. He had little to lose because the terrain was rising slightly and ridges were showing up. Soon we observed him getting in some mighty nice ridge flying, allowing the air flow to lift him smoothly over the humps. Near Gassaway, however, he rode the air up to 5,000 ft. and held it there in anticipation of Elkins' higher ground.

All along Bert and Emmett has used about 75 per cent rudder trim in cruising. They repeatedly assured us over 122.8 that there was nothing to it in the way of effort. Afterwards, Bert was practically apologizing to everybody, explaining: "There's not much to talk about because it was just routine flying once off the ground." He flew the first 3 hrs. 30 mins. Then Emmett took over for the same amount

No. 27 in a Series —Advt.

THE FIRST DOUGLAS WITH A LEAR L-2

NOW IT CAN BE TOLD—the Lear L-2 Autopilot installation for DC-3's performs smoothly, accurately and rapidly. How do we know? We have just made the industry's first DC-3 installation of an L-2—in American Liberty Oil Company's Douglas, piloted by Ernie Blagg (Arthur Godfrey's Lear autopilot is not a Lear L-2 but an early, different type).

LODESTARS AND MALLARDS can use installations similar to that we made in the Douglas. It differs from the 3-axis servo unit for smaller planes in that it features three separate servos, which are heavy duty types. The Beech D18S uses a 2-axis unit plus a separate aileron servo.

OUR AUTOPILOT SERVICE is reaching full swing, with several executive transports to be equipped with L-2's. Proper installation by skilled technicians is essential. Our experienced staff is equipped with a complete L-2 test system for accurate calibration on the ground and in the air. We are completing a mock-up for bench-testing autopilot amplifiers.

FOR YOUR L-2 INSTALLATION, visit our Love Field headquarters. See and inspect this fine Lear equipment in our shops. Let us furnish complete facts and details for satisfactory service.

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THE WORLD'S FINEST LIGHT PLANE!

• *Taylorcraft "Sportsman"*

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C. G. LESLIE, Stover Leslie Flying Service, Inc., Lisbon, Ohio, says, "Of the many planes used in our training program, TAYLORCRAFT is the most economical of all."

All around visibility, two place side-by-side cabin with a 15 cu. ft. cargo space, 85 H.P. engine with starter and generator—these and many other features make the new TAYLORCRAFT "Sportsman" the best buy in the LOWEST PRICED field.

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of time, after which Bert finished the trip.

Over Front Royal a message was received advising that a photographer had taken off from Washington National Airport and wanted to rendezvous over Arcola to get some air shots of the Aero Commander. But over Arcola we saw nothing. A couple of Navy planes cruised by in the distance but nothing resembling a photographer showed up. The Aero Commander milled around looking and finally called Washington to find out more. "What kind of airplane does the photographer have and where is he?" Bert asked. The answer came back, "Cub." Apparently it was thought the Aero Commander would be limping along somewhat slower than its 130 mph. or more true air speed. So Bert took the Aero Commander on across National Airport at 1410, completing the 1,160-mile non-stop trip in 7 hrs. 55 mins.

At Butler's on the airport, we figured out the rest of the data. Average speed had been 147 mph., including 15-mph. wind effect from take-off back in Oklahoma City. Fuel consumed totalled 117 gals., for an average of 13.6 gals. per hr., leaving 43 gals. in the Aero Commander—"We could have gone on to Boston," commented Bert.

How about the engine? Oil and cylinder head temperatures had averaged just under normal. More power could have been pulled but 70 per cent had proved ideal. The propeller was a metal Hartzell, same as used on 260 Navions and rated as having as much as 88 per cent efficiency.

Some of the pilots on National Airport found the single-engine flight difficult to believe. "You mean you took off on one engine, too?" they asked Bert. One onlooker gaped as he saw the Aero Commander taxi in with a propeller gone. "Landed that way," said the lineman. The onlooker's eyes popped. "Poor guy," he commented. "He must have had it pretty bad to lose a prop."

We ran into Old-Timers Vince Burnelli and Cloyd Clevenger, who were among a crowd of a hundred or so writers and pilots on hand for the arrival. "It took a pretty good airplane to do what they just did," said Vince. "We're really getting somewhere when an airplane will do that. It used to be that the only reason people hung another motor on an airplane was to try to give it enough power to fly on both engines. Eventually we got to where we could feather an engine and get by under ideal conditions. But here's

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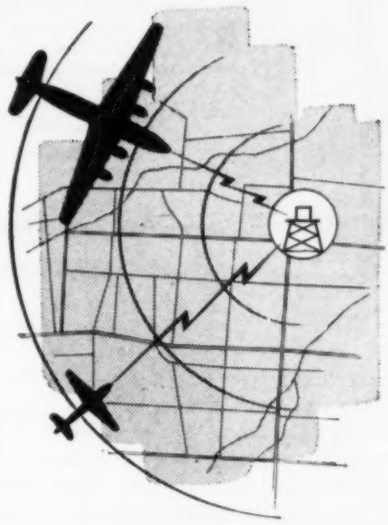

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an airplane that will not only fly on one engine but can take off from a dead start on one engine. That's progress and a whole lot of safety." Burnelli, we'd say, knows whereof he speaks. So does Clevenger. Said Cloyd, "Whattayouknow—single-engine take-off. I'd like to fly that airplane!"

Another former bush pilot we ran into at the airport was Roy (Fish Kicker) Dickson, veteran Alaskan airman, Lockheed test pilot during the last war and now flying a converted A-26 for Phillips Petroleum out of Bartlesville, Oklahoma. "They've got something," he assured us after looking over the Aero Commander pretty closely. "Instead of saying they could take off on one engine, they went ahead and did it. That means a lot."

Meanwhile, Ted Smith, who designed the Aero Commander in 1944 and has since headed the group of engineers and craftsmen who developed it, was finding the same kind of response as he milled around the crowd. Ted was all smiles. It was undoubtedly the happiest day of his life and he couldn't hide the fact, modest though he tried to be.

To Pilots Bert Bantle and Emmett Morris it was exciting but still routine. "I've handled it on one engine from take-off so many times in tests that it seems almost normal," Bert said. "Others will come to accept its single-engine ability the same way after they have a chance to get used to the idea. They should have designed airplanes this way a long time ago. Why shouldn't a twin-engine airplane do what we have done? That's the justification for two engines—if one quits you should be able to keep right on going. Otherwise, why carry two if it's safety you're after?"

Leaving Washington later, the Aero Commander returned home via Chicago. Riding with Bert, we enjoyed a cross-country introduction to its twin-engine performance. With both Lycomings humming and both controllable Hartzell propellers turning, we were off the ground at Washington National Airport in about 600-800 ft. At its best climbing speed of 110 mph., the nose was hoisted up to a 35-degree angle for 1,800 ft. per min.

Here are some performance examples. At 2,000 ft., and using 21.5 ins. and 2,700 rpm., it indicated 180 mph. At 3,000 ft., and using 22 ins. and 2,700 rpm., true air speed was 187 mph. At 9,000 ft., and grossing about 4,700 lbs., it indicated 158 mph. on 65 per cent of power (21 ins. and 2,650 rpm.) for a true air speed of 190 mph. Its Lycomings are rated at 260 hp. for take-off at 3,400 rpm., and at 240 hp. for continuous operation at 3,000 rpm. Recommended performance cruise is at 2,750 rpm. and economy cruise is at 2,600 rpm.

With Wayne Thomis, we had listened to all manner of technical stuff attempting to explain how the Aero Commander came to be such a single-engine performer. The gist is simply that it is a clean, modern design utiliz-

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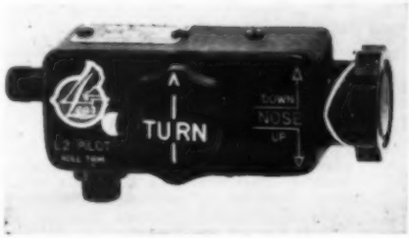
ing latest aerodynamic and structural principles. True it is that its single-engine take-off power loading at 4,800 lbs. gross weight is 18.46 lbs. per hp. but this can hardly be called "over-powered." A little figuring on other aircraft will show that it is more a case of being "just right", as far as single-engine safety is concerned.

As somebody summed up, the little twin's outstanding performance comes from "some engineers who didn't have to justify previous engineering but took a fresh approach with brand-new principles and ideas and came up with something modern all the way through —unhampered by throw-backs in engines, configuration theories, and timid management. It took this to do the things they have done with the Aero Commander. The Oklahoma City-Washington single-engine flight proves by action that progress has been made —the kind of progress everybody has always wanted but few expected. The result will be greater aircraft usefulness for a larger number of people and new standards of twin-engine saftey and dependability for private aircraft owners." ★ ★ ★

Another First . . .



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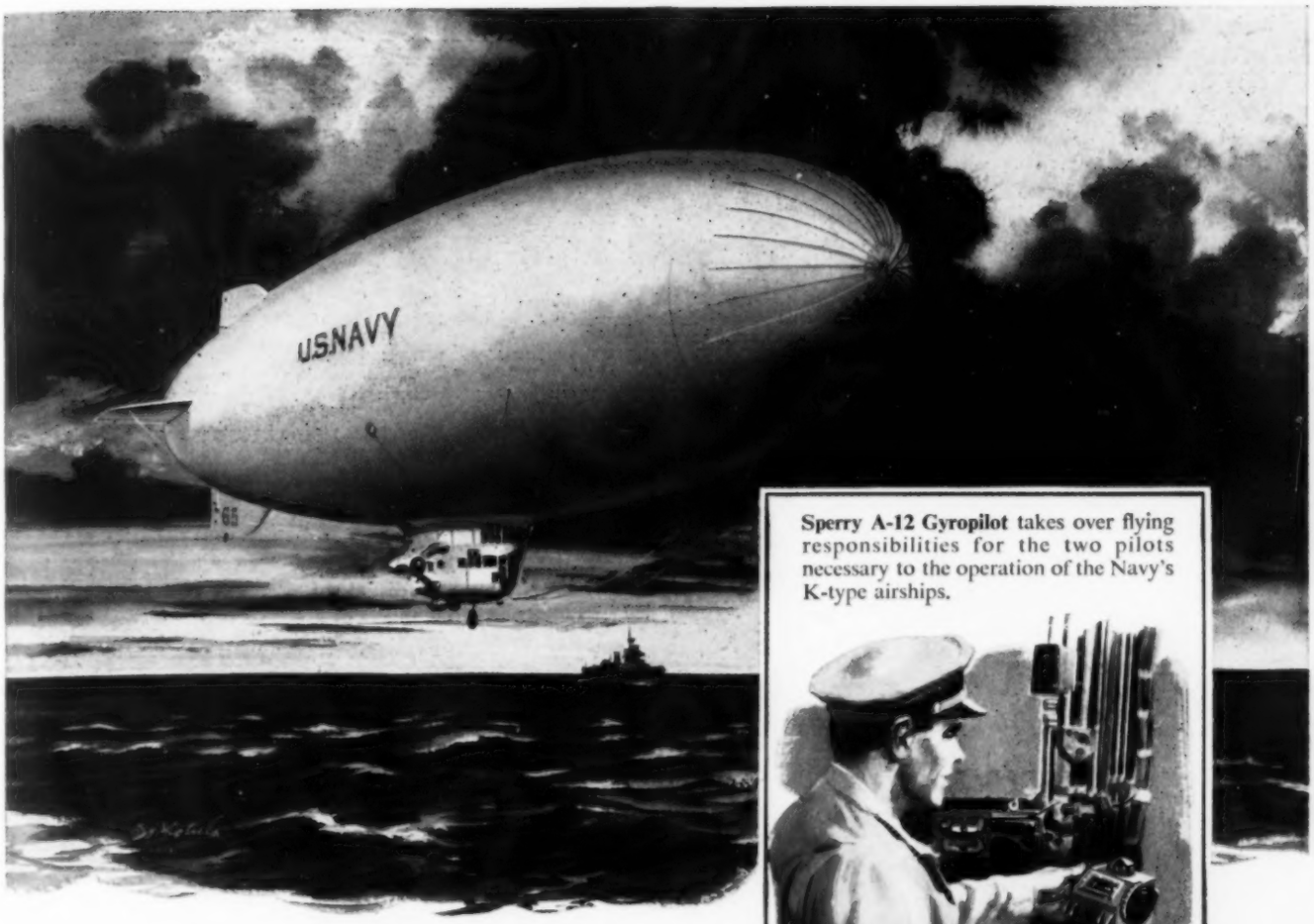

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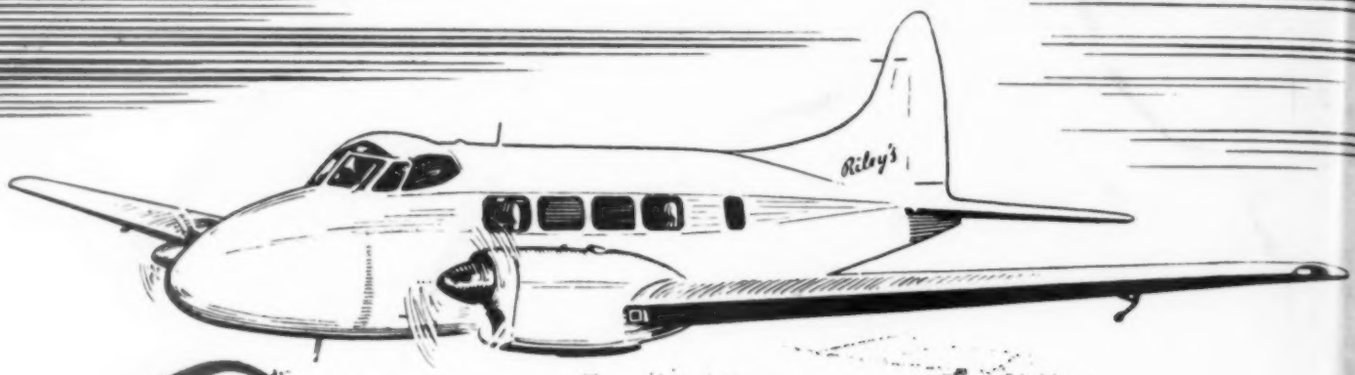

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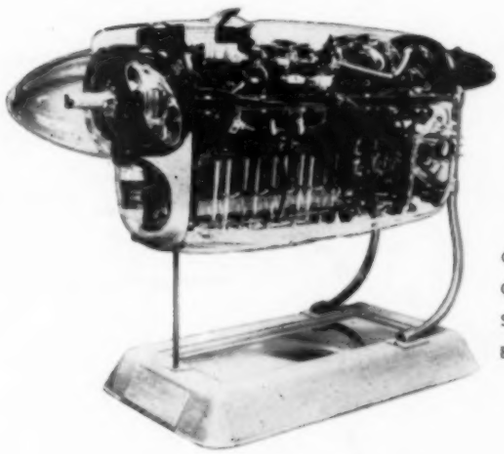

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